178891

EX·LIBRIS·COLL·MED·PHILAD·INSTIT·A·D·MDCCLXXXVII

NON SIBI SED TOTI

Class______ No.______

Presented by

Exchange.

Bdg.2.60

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

Digitized by the Internet Archive
in 2016

https://archive.org/details/delawarestatemed2319medi

Compl

DELAWARE HOSPITAL NUMBER

DELAWARE STATE MEDICAL JOURNAL

Official Organ of the Medical Society of Delaware
INCORPORATED 1789

VOLUME 23
NUMBER 1

JANUARY, 1951

Per Year, $4.00
Per Copy 50c

CONTENTS

Testicular Tumors, *Park W. Huntington, Jr., M. D.,* and *Anne C. Dunbar, M. D.,* Wilmington, Del. 1
Meigs' Syndrome, *Isadore Slovin, B. A., M. D.,* Wilmington, Del., and *James Nealon, M. D.,* New York 8
Cortisone and ACTH in the Treatm'nt of Diseases of the Eye, *Robert L. Dickey, M. D.,* Wilmington, Del. 11
Intestinal Obstruction, *Charles R. Green, M. D.,* Wilmington, Del. 14
Clinicopathological Case Record, *James Ripepi, M. D., George W. Martin, Jr., M. D.,* and *Park W. Huntington, Jr., M. D.,* Wilmington, Del. 16
The Care of Hand Injuries 18
Methadone 20
Editorials 21
Books Received 23
Book Reviews 24

Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly. Copyright, 1951, by the Medical Society of Delaware.

COLLEGE OF PHYSICIANS LIBRARY
FEB 6 1951
OF PHILADELPHIA

REMEMBER THIS TERM?

Filed for binding

Accuratis!

Undoubtedly you would
if you had practiced in 1876,
when tintypes, buffalo robes, and elaborate mixtures
of prescription ingredients were in vogue—and Eli Lilly and Company
had just begun. Since then, the request to compound
a prescription *accuratissime,* meaning *most carefully,*
has become unnecessary. Today, progress has made pharmaceutical
accuracy certain. So you don't whip out
a quill pen and write *accuratis.*—when you specify Lilly,

ELI LILLY AND COMPANY 1876 75th ANNIVERSARY 1951

Lilly ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U. S. A.

OF PHILADELPHIA

known
and
relied on
the world over

ADRENALIN (epinephrine, Parke-Davis) is today, as it has been for many years, one of the most versatile and useful drugs, known and used the world over. Introduced to the medical profession by PARKE-DAVIS in 1901, ADRENALIN is widely used in many conditions — bronchial asthma, serum sickness, the Adams-Stokes syndrome, and anesthesia accidents.

PARKE, DAVIS

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 1

JANUARY, 1951

Per Copy, 50c
Per Year, $4.00

TESTICULAR TUMORS

Report of Two Cases

Park W. Huntington, Jr., M. D.,*
and
Anne C. Dunbar, M. D.,**
Wilmington, Del.

Testicular tumors have stimulated medical interest for the past century but not until the past few years has a real attempt been made to establish a clear-cut classification based on the microscopic pathology. The mode of metastasis, particularly of the teratomatous tumors, remains a theory, and hormone studies as a prognostic aid are assuming less significance.

The diagnosis of two teratoid testicular tumors in recent months at the Delaware Hospital stimulated interest regarding these tumors. Therefore, this paper will review briefly the history of testicular tumors, their basic histology, classification, prognosis and treatment with special emphasis on the teratoid tumors and briefly report two cases.

History

One of the earliest references to testicular tumors was in 1696 when St. Donat described a fetal skull and pigmented optic cups in a testicular tumor and was therefore one of the first to demonstrate the embryonic components of some of these tumors. (4) Terminology was exasperating and confusion ran rampant. Chevassu and Nicholson were the first workers to attempt to clarify this confusion. Chevassu clearly described and distinguished between the two commonest forms of testicular neoplasms—seminoma and teratoma. He called the seminoma "epithelioma seminal" or carcinoma of the seminal epithelium.

Ewing, in 1911, proposed the view that seminomas did not arise from the seminiferous tubules, but that they originated from teratomatous precursors, or as he said, "one-sided development of a teratoma." Thus, there has been no clear-cut classification of these tumors and as Willis states, "embryonal carcinoma has become, for many writers, a dumping ground for all cellular malignant growths."(21)

Incidence

The maximum age incidence of testicular tumors is 20-50 years. In a series of 125 tumors of the testis, the mean age for the entire group was 29 years for the teratoid tumors, 31.35 years for the seminomatous tumors and 27.74 years for the interstitial cell and miscellaneous group.(11) Less than 3% occur below the age of 15 years. Statistics show that 96% of all testicular tumors are malignant, and these neoplasms constitute 0.5-2% of all malignant tumors in males.(16) The right testis is slightly more frequently involved than the left possibly owing to the higher incidence of cryptorchidism on the right side.(6) Rarely are these tumors bilateral. Secondary testicular tumors are reported, but rare.

Symptoms

The most common presenting clinical manifestation is enlargement of the testicle, or a testicular mass, which rarely is too small to be detected by palpation. Pain in the affected testicle is a late manifestation. Symptoms due to metastatic lesions are occasionally the presenting complaint.

Metastasis

Metastatic spread is commonly through the lymphatic channels to the abdominal aortic lymph nodes, which extend from the bifurcation of the aorta to the level of the renal veins. Extension to the mediastinum may occur through direct lymphatic channels from the testis.(16) Enlargement of the inguinal nodes indicates invasion of the parietal tunics and scrotum.

Normal Histology of The Testis

The testis is a compound tubular gland surrounded by a fibrous capsule from which sep-

---

*Resident in Pathology, Delaware Hospital.
**Resident in Pathology, Delaware Hospital.

178891
MAY 2 1953

tae extend to divide the gland into lobular compartments. Each lobule contains numerous coiled seminiferous tubules which are composed of two elements: the nutritive and supportive cells of Sertoli, and the sex, germ or spermatogenic cells. The seminiferous epithelium is supported by a basement membrane which is in turn strengthened by interstitial tissue containing collagenous fibers, vessels, nerves and several types of cells i. e. fibroblasts, mast cells, embryonic perivascular elements, and the interstitial cells of Leydig.

HISTOLOGY

Moon and Hullinghorst found that in a series of 125 testicular tumors, 121 (96%) were teratoid in structure. "Included in the teratoid tumors are those commonly designated as seminomas, teratomas, embryonal adenocarcinomas, embryonal carcinomas, and chorio-epitheliomas." However, in a careful histological review, they describe only *three* fundamentally (11) distinct patterns: seminoma, teratoma, and carcinoma.

Friedman and Moore in a report of 922 testicular tumors in 1946 described *four* fundamental structural patterns, ie. seminomatous, embryonal carcinomatous, chorio-epitheliomatous, and teratomatous patterns.(6)

Most authors are in agreement regarding the histological classification of teratoid tumors having a seminomatous or teratomatous pattern. However, there is disagreement regarding the embryonal carcinomatous and chorio-epitheliomatous patterns, some authors grouping them together as carcinoma and some classifying them as separate entities. An outline of the basic patterns in teratoid tumors is as follows:

I **Seminoma** pattern (35-44% of testicular tumors in two series of cases):

1. Polyhedral cells with sharp cell borders
2. Cytoplasm pale; clear
3. Nuclei round, large, centrally placed; rarely multiple.
4. Nuclear membranes prominent.
5. Nucleoli centrally placed.
6. Cells remarkably uniform and in cord-like masses divided by connective tissue trabeculae.
7. Trabeculae of connective tissue may be infiltrated with lymphocytes, eosinophiles, plasma cells, epitheloid cells, or tuberculoid granulomas with giant cells.
8. The tumor respects tissue planes, does not aggressively invade and destroy peripheral tissues.

II **Teratoma** pattern (7-13% of testicular tumors in two series of cases):

1. If there are no histologically recognizable malignant components, the tissue is designated "adult."
2. Wide range of variation from immature embryonic structures to adult structures.
3. Epithelial masses, glands and cysts; cartilage and muscle; specific organoid structures such as: intestinal mucosa, prostatic acini, meningeal masses, respiratory epithelium, dental germs, bones; even tissue resembling mixed tumor of the parotid gland.

III **Carcinoma** pattern (54-64% of testicular tumors in 2 series of cases) This pattern, as its name implies, includes all tumors in which there is evidence of histologically malignant elements.

A Embryonal carcinomas:

1. Great variation in cell structure.
2. Cells of epithelial type; cuboidal or columnar.
3. Cytoplasm clear to eosinophilic and granular.
4. Mitotic figures numerous.
5. Focal areas of large multinucleated giant cells.

B Chorio-epitheliomas:

1. Cytotrophoblastic and syncytial trophoblastic elements, duplicating the architecture of placental villi.
2. Active invasion and destruction of surrounding tissue with vascular invasion, necrosis and hemorrhage.

IV **Teratocarcinoma.** A term which has been proposed for a large group of pleomorphic tumors in which both differentiated teratoid structures and histologically malignant elements are present, or a combination of patterns II and III as presented in this outline.

Classification:

As previously mentioned, Friedman and Moore based their classification of teratoid testicular tumors on four fundamental structural patterns according to which they placed all tumors studied into the following convenient groups, ie.:

1. Seminoma
2. Teratoma
3. Embryonal carcinoma (including chorio-epithelioma)
4. Teratocarcinoma (a combination of teratoma and embryonal carcinoma patterns)
5. Interstitial cell
6. Miscellaneous

Of the 922 cases studied by Friedman and Moore, 35% were teratocarcinomas. The percentage incidence in the tumors of the combined structural patterns was as follows:

1. 77.5%—mixture of teratoma, embryonal carcinoma and/or chorio-epithelioma
2. 5.0%—mixture of teratoma and seminoma
3. 15.0%—mixture of seminoma, embryonal carcinoma and/or chorio-epithelioma.(6)

Moon and Hullinghorst, basing their classification of teratoid tumors on only three structural patterns, found the following combinations in a series of 121 cases: (11)

44	pure seminomas
13	pure teratomas
18	pure carcinomas
35	terato-carcinomas
3	seminoma-teratomas
4	seminoma-carcinomas
4	seminoma-teratoma-carcinomas

The following figure adopted from Moon and Hullinghorst (11) illustrates the incidence and overlap of basic patterns in teratoid tumors of the testis.

Lewis' classification parallels that of Friedman and Moore in that he divides tumors of germ cell origin into four large groups — Seminoma, Embryonal carcinoma, Teratocarcinoma, and Teratoma. Similarly he includes under embryonal carcinomas, chorio-epitheliomas and differentiates these tumors (of syncytiotrophoblastic origin) from choriocarcinoma (of cytotrophoblastic origin). His teratocarcinoma group is likewise classified according to its histologic components—ie. teratoma-carcinoma, teratoma-chorio-carcinoma, teratoma-chorio-epithelioma (9).

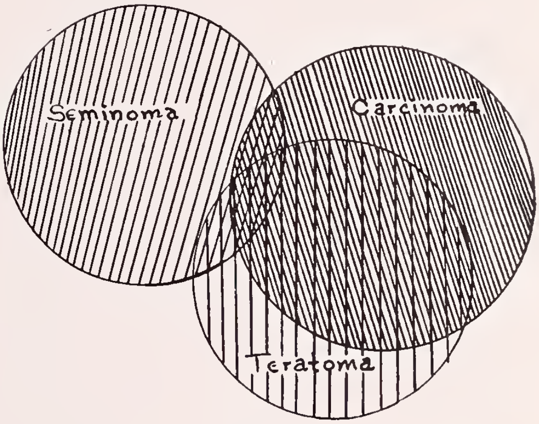


Figure 1

Some authors attempt to divide malignant teratomas according to monodermal, bidermal or tridermal origin. Thus they consider the teratocarcinoma of Fiedman as of multidermal origin and the embryonal carcinoma of Friedman as of monodermal origin. This latter classification is disturbing since according to Willis a "teratoma is a true tumor composed of multiple tissue of kinds foreign to the part from which it arises."(21)

In summary, a useful classification of testicular tumors appears to be:

- A. Primary
  - I Tumors of Supporting Tissues (Miscellaneous)
  - II Tumors of Interstitial Cell origin
  - III Tumors of germ cell origin
    - 1. Seminoma
    - 2. Embryonal carcinoma
    - 3. Trophocarcinoma
      - a. Choriocarcinoma
      - b. Chorio-epithelioma
    - 4. Teratocarcinoma
    - 5. Teratoma
      - a. Immature
      - b. Mature (Adult)
- B. Secondary

The Relation of Hormones to Testicular Tumors

Teratomas of the testis have been produced successfully in roosters by the injection of zinc chloride, zinc sulfate, zinc nitrite and even copper sulfate into the testis. The tumors so produced appear adult in type and resemble the adult cystic teratomas seen in men. They are not transplantable and do not produce gonadotropic hormone in sufficient quantity to appear in assays of the blood. According to Twombly, the primary factor in the development of these tumors is necrosis produced by these zinc or copper salts. The role of hormones is apparently secondary, although zinc will only produce tumor formation in the spring when the testis is actively growing under the influence of the host's own hormones or when stimulated by injected anterior pituitary extract.(18) There is a more direct relation between tumor production and endocrine stimulation seen in Leydig-cell tumor of mice produced by prolonged estrogenic therapy. However, the interstitial cell tumors of the testis constitute only 1% of the testicular tumors in man.

Two types of hormones associated with testicular tumors are differentiated in the urine —i. e. Follicle Stimulating Hormone and Chorionic Gonadotropin. These hormones are not present in the urine of healthy men or in the presence of benign testicular lesions. Chorionic gonadotropic hormone is associated with all varieties of teratoma, but certain observations suggest that it may be produced by embryonal carcinomas.(18) Occasionally chorionic gonadotropin may be associated with a seminoma and if this be the case, it would suggest the teratoid nature of such tumors.(18)

FSH has been found in the urine of 75% of the patients with teratoid tumors, and especially those of the seminoma type. Since the differentiation of these hormones is difficult, the urinary hormone assay is usually expressed as mouse units of prolan or FSH per liter of urine.

It was formerly believed that if there was a marked decrease in excretion of hormone following irradiation, the extent of drop was an index of the radiosensitivity of the tumor.(7) However, the Aschheim-Zondek test may be negative following x-ray therapy, although the lesion continues to progress. A steady increase in hormone titre following x-ray therapy is considered good evidence of progressive metastatic spread.

In 35% of a series of control patients, without testicular tumor, Lewis found positive Friedman tests, thus suggesting the presence of gonadotropic hormone; in 34% of a group of patients with seminoma, who should have secreted no gonadotropins, these hormones were found in high concentration. Lewis therefore, concludes that positive Friedman tests cannot be interpreted as evidence of testis tumor, nor of metastasis; but that a "repeatedly confirmed positive reaction from a patient with tumor indicates the likelihood of the presence of chorionic tissue in the tumor."(9)

It has been shown repeatedly that hormone assays may be negative in the presence of malignant testicular tumors with or without metastatic spread. Thus, as summarized by Sauer, "It is the present consensus that a diagnostic positive test, based on a complete analysis of the hormonal contents of a 24 hour sample of urine, indicates a grave prognosis, while a negative result is of little prognostic significance."(15)

Prognosis

According to Sauer and Burke, the prognosis in patients with testicular neoplasms depends mainly on three factors:

(1) The histopathology; (2) The biological properties; (3) The stage of the disease at the start of therapy.

"Study of the data collected indicated that the outlook improves in direct proportion to the degree of differentiation of testicular neoplasms. While patients with differentiated or mature cell tumors offer a comparatively fair prognosis, it was found that the prognosis is less favorable if the tumor consists of undifferentiated cells of embryonal origin. It was determined also that the presence of differentiated or adult teratomatous cell structures in an otherwise purely embryonal cell tumor improves the prognosis significantly."

There are several theories to explain the malignant behavior of the adult teratoma:

1. The teratoma is of multicentric origin, developing from many foci along the course of the genitourinary tract.

2. The adult differentiated teratoid tissue

invades the blood vessels and metastasizes as such.

3. Malignant cells exist in the primary tumor, but are overlooked.

4. The most satisfactory theory is that of a "totipotent germ cell," which may metastasize and develop into a teratoid tumor. (6)

Friedman studied the structure of metastatic lesions and found that 90% of the embryonal carcinomas metastasized as embryonal carcinomas and/or chorio-epitheliomas; terato-carcinomas metastasized as embryonal carcinoma and/or chorio-epithelioma (40%), and as frank teratoid structures (60%). Likewise, one-half of the secondary lesions from adult teratomas were monocellular and one half were teratoid.

Teratoid tumors metastasize early and widely first through the lymphatics to the iliac and lower lumbar nodes, with subsequent vascular invasion and hematogenous spread to liver, brain, lungs, bones, thyroid gland, etc. Metastasis to even the tricuspid valve has been reported. (12)

TREATMENT OF TESTICULAR TUMORS

The treatment of testicular tumors depends on early diagnosis and consists of surgical removal, simple orchiectomy with or without radical resection of para-aortic and peri-renal lymph nodes, and irradiation depending upon the histologic structure of the tumor. Since seminomas have a high radiosensitivity, the preferred treatment for tumors of this type is simple orchiectomy followed by irradiation to the retroperitoneal lymphatic drainage area.

Adult teratomas are best treated with radical orchiectomy without x-rays as the lethal dose for a mature teratoma cannot be reached with safety according to Lewis. (9)

Embryonal carcinomas vary in radiosensitivity; however, the treatment of choice is radical orchiectomy followed by x-ray.

Trophoblastic tumors (i. e. choriocarcinoma and chorio-epithelioma) are best treated with radical orchiectomy and x-ray irradiation, unless inoperable metastatic nodes remain. In those testicular tumors in which retroperitoneal and/or mediastinal metastases are found, the irradiation is given through portals which include the thoracic area; if no secondary tumor is found, the irradiation is given to the abdominal and lumbar areas only. (22)

CASE REPORTS

Case 1. The patient, RH., Delaware Hospital #172923, a 24 year old white male was first seen at the Delaware Hospital on 7/28/50 with a chief complaint of enlargement of the left testicle which had been progressing since May, 1950. The present illness dated back to March, 1950 at which time, he complained of soreness, tenderness, and slight swelling of the left testicle. Epididymitis was first suspected and he was treated with antibiotics. Following treatment, the mass decreased in size and the soreness subsided. However, continued painless enlargement was noted in May, and there was a 12 pound loss of weight in the two months prior to admission.

Past history revealed a left mastectomy for gynecomastia in 1946 while the patient was in the Navy.

Physical examination revealed a thin, young adult male with no significant physical findings other than an enlarged, firm, nontender, left testicle, three to five times normal size.

On 7/29/50, the patient underwent a left orchiectomy. At operation, a cystic testicular mass, the size of an orange, was found associated with a small hydrocoele sac. The testicle could not be differentiated from the tumor mass.

Microscopic examination of the gross specimen revealed the typical cellular structure of an adult teratoma, containing various well differentiated tissue groups, with focal areas of histologically malignant elements. According to our classification based on structural pattern, the tumor was designated a terato-carcinoma.

Laboratory examinations and chest x-ray were recorded as normal. The post-operative Friedman test was negative. On 8/7/50 radical dissection of the retroperitoneal lymph nodes (on the left side) was undertaken. The operative procedure was according to Nagamatsu's technique and operation revealed a large mass of apparently malignant lymph nodes firmly fixed in the region of the left renal pedicle and as dissection was carried downward several small bean-sized cystic tumor masses were also isolated.

Microscopic examination of the gross specimen revealed adult teratoid structures and malignant teratocarcinoma cells similar to that reported from the left testicular tumor.

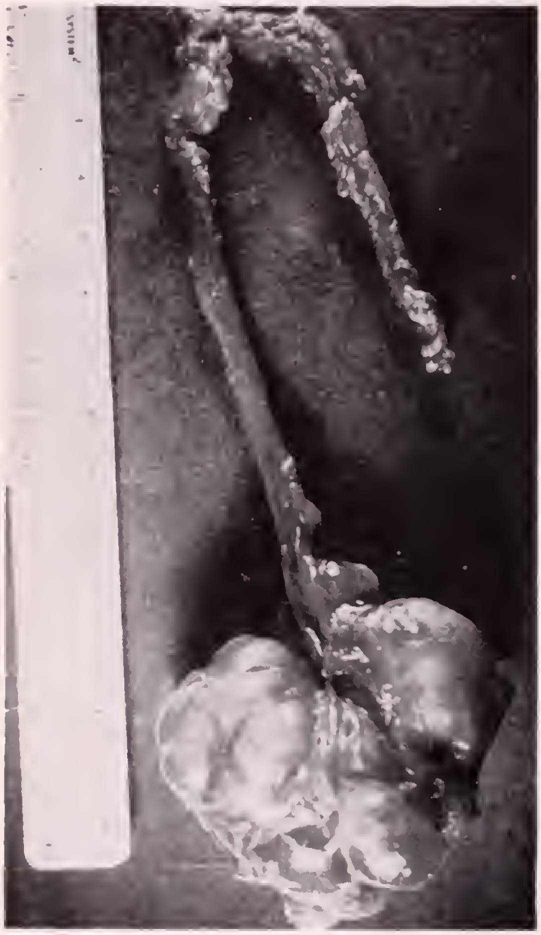


Figure 2—Cose 1.
Gross specimen of secondory tumor in left renol pedicle.

Over a two month period, the patient was given x-ray therapy through 9 separate portals, which included thoracic and abdominal areas. At one period his white cell count was slightly depressed, but blood transfusion brought it to within normal limits again.

Case 2. Delaware Hospital #121091. The patient, G. M. Jr., a 34 year old white male was admitted to the Delaware Hospital on October 24, 1950 with a chief complaint of a hard right testicle with sharp lancinating pain of 24 hours duration. He had first noted that the right testicle was more firm and slightly larger than the left for a period of five years, but he attributed this difference to several incidences of trauma to the region.

Physical examination revealed a tall lean white male of 34 years, the only positive physical finding being a firm, slightly enlarged tender right testicle.

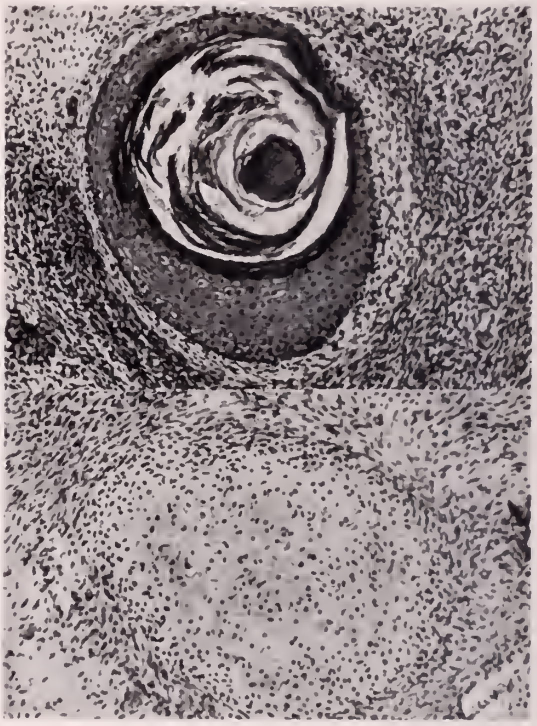


Figure 3—Cose 1.
Secondory tumor showing cortiloge ond squomous epithelium. (X 100).

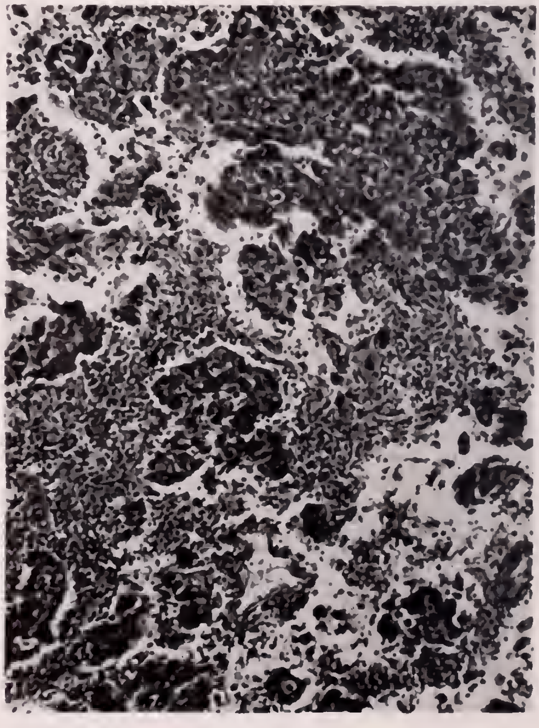


Figure 4—Cose 1.
Secondory tumor showing embryonol carcinomo. (X 130).

Laboratory studies were essentially normal. The chest x-ray and intravenous pyelogram were normal.

On 10/26/50 a right orchiectomy was performed. The gross specimen measured 5½x3 centimeters. The outside surface was smooth and shiny. Opposite the epididymis was a mass of whitish firm tissue from which oozed a viscid, yellowish white exudate on cut section. There was a central necrotic area in the testicle measuring 1½ x1 centimeters which was surrounded by hemorrhagic testicular tissue. Microscopic examination revealed polyhedral cells with sharp cell borders and pale clear cytoplasm. The nucleoli were centrally placed and the cells appeared to be remarkably uniform and in cord-like masses. The connective tissue trabeculae were heavily infiltrated with lymphocytes. This tumor in contrast to the first described did not appear to be actively invasive but rather to compress the seminiferous tubules. On the basis of its typical histologic pattern, it was diagnosed as a seminoma.

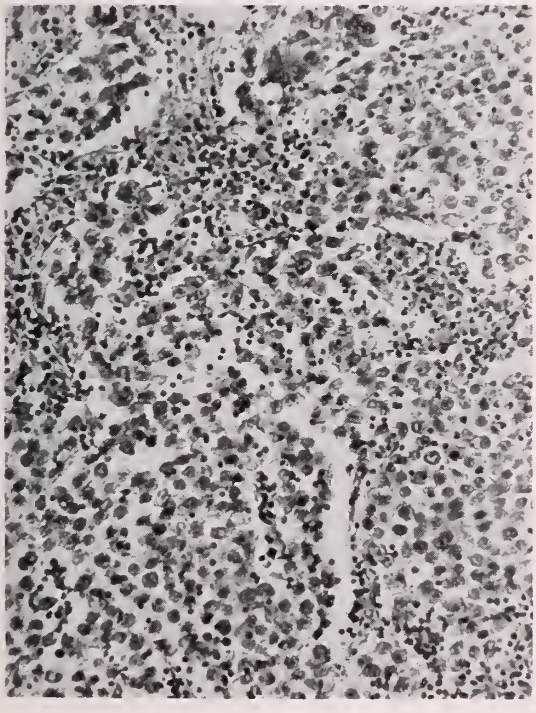


Figure 5—Case 2—Seminoma (X 250).

On 11/2/50 the patient was again taken to surgery for radical dissection of the retroperitoneal lymph node drainage area on the right side. The procedure was similar to that of the first case. No positive lymph nodes or metastatic tumor were found. The post-operative Friedman test was negative.

To date the patient has received irradiation through five separate abdominal portals as a prophylactic measure; as was previously mentioned, no abdominal metastases were found at operation.

Summary and Conclusions

1. Testicular tumors most frequently occur during the active sexual life of the patient.
2. A classification of these tumors is presented, based on three fundamental histologic patterns: seminoma, teratoma, and carcinoma, which assists further study.
3. The relationship of hormones to testicular tumors is reviewed; their significance as a prognostic aid is evaluated.
4. A brief summary of current methods of treatment is given.
5. Two case reports of teratocarcinoma and seminoma are presented.

BIBLIOGRAPHY

1. Beilly, Jacobs; Kurland, Irving and Jacobi, Mendel: Hormone Excretion and Bioassay of Extirpated Tumor in Teratoma of the Testis, Endocrinol., 26:965-970, 1940.
2. Bosse, Milton D.: Rhabdomyosarcomatous Pulmonary Metastases from a Teratoma Testis, Amer. Jour. Cancer, 39:343-346, 1940.
3. Campbell, Meredith F.: Primary Malignant Tumors of the Urogenital Tract in Infants and Children, JAMA, 109:1606-1611, November 13, 1937.
4. Ewing, James: Neoplastic Diseases, 4th ed., p. 854, Philadelphia; W. B. Saunders Co., 1940.
5. Foot, N. C.: Testicular Tumors, N. Y. St. Jour. Med., 49:284-286, 1949.
6. Friedman, N. P. and Moore, R. A.: Tumors of the Testis: A Report of 922 Cases, Milit. Surg., 99:573-593, 1946.
7. Grace, Edwin J.: The Fallibility of Prolan A Excretion as a Prognostic Agent in Cases of Teratoma Testis, Amer. Jour. Surg., 45: No. 2:280-281, 1939.
8. Johannesson, C. J.: Teratoma Testis with Thyroid Metastasis, Radiography and Clinical Photography, Rochester, New York, 11: No. 4:10, 1935.
9. Lewis, L. C.: Testis Tumors: Report on 250 Cases, Jour. Urol., 59:763-772, 1948.
10. Melicow, M. M., Robinson, J. N. et. al.: Intestitial Cell Tumors of Testis, Review of Literature and Report of Case; Discussion of Gynecomastia and Testosterone; Incidence in Animals; Jour. Urol., 62:672-693, 1949.
11. Moon, H. D. and Hullinghorst, R. L.: Basic Patterns in Teratoid Tumors of the Testis, Amer. Jour. Path., 24:1067-1082, 1948.
12. Morgan, JRE.: A Metastatic Tumor of the Tricuspid Valve Arising in a Case of Malignant Teratoma of the Testis, Jour. Lab. and Clin. Med. 749-751, 1934.
13. Murrell, T. W. & Pepple, P. W.: Tumors of the Testicle with Dermatologic Sequelae; Arch. Dermat. and Syph., 57:930-934, 1948.
14. Reiners, C. R. Jr. & Horn, R. C. Jr.: Interstitial Cell Tumor of the Testis, Amer. Jour. Clin. Path., 19: 1039-1047, 1949.
15. Sauer, H. R. & Burke, E. M.: Prognosis of Testicular Tumors, Jour. Urol., 62:69-74, 1949.
16. Scully, R. E. & Parham, A. R.: Testicular Tumors; Seminoma and Teratoma, Arch. Path., 45:581-607, 1948.
17. Scully, R. E. & Parham, A. R.: Testicular Tumors,

Interstitial Cell and Miscellaneous Neoplasms, Arch. Path., 46:229-242, 1948.

18. Twombly, G. H.: The Relationship of Hormones to Testicular Tumors; Endocrinology of Neoplastic Diseases — A Symposium by 18 Authors, pp 228-243. New York: University Press, 1947.
19. Vermoten, V. & Hettler, W. F.: The Significance of Gonadotropic Hormones of the Urine of Patients with Testicular Tumors; Jour. Urol. 60:519-523, 1948.
20. Vosburgh, R. K. and Alderman, J. E.: Testicular Teratoma Metastasizing to the Spine, Jour. Bone and Joint Surg., 23:701-708, 1941.
21. Willis, R. A.: Pathology of Tumors, p. 554. St. Louis; C. V. Mosby Co., 1948.
22. Personal Communication: J. W. Alden, Dept. of Roentgenol., Delaware Hospital.

MEIGS' SYNDROME*

A Case Report

ISADORE SLOVIN, B. A., M. D.**
Wilmington, Del.
and
JAMES NEALON, M. D.***
New York

INTRODUCTION

The syndrome of ovarian fibroma associated with ascites and hydrothorax is not new. It was first reported in 1933 by Meigs and Cass. It is needless to impress the importance of this great contribution — its significance has been emphasized many times. Suffice it to say that the recognition of this syndrome may change a grave prognosis to a more favorable one. Originally Meigs' Syndrome presupposed the presence of a benign fibroma of the ovary. Unfortunately it has since been extended to include any lesion of the ovary, even carcinoma, which is accompanied by ascites and hydrothorax. We say unfortunately, since originally a diagnosis of Meigs' Syndrome implied a favorable prognosis. With the inclusion of malignancies as part of the syndrome a favorable outcome cannot be assumed.

A review of all cases reported of Meigs' Syndrome has been presented very ably in a recent paper (2) and duplication is not necessary. Since our case represents only the 46th one in the literature we feel it is a sufficient contribution to be recorded.

CASE REPORT

Case #10365, Metropolitan Hospital. L. P., 20 years old, single, Puerto Rican, was admitted October 23, 1947. At that time her chief complaint was pain in the right side of the chest and back of four days' duration. The history of the present illness noted that she had suffered with weakness of one week's duration as well as pain in the right side of the chest, exaggerated by inspiration, and cough of one week's duration. She did not complain of expectoration or hemoptysis. There was no history of loss of weight, no sweats, chills or fever. There was no nausea or vomiting. Previous history was irrelevant since the patient had only measles as a child and had no operations or accidents. Her family history revealed no serious illnesses in any members of her family. A review of the systems revealed no symptoms except for slight dyspnoea on exertion and enlargement of the abdomen. She had no urinary symptoms, her menstrual periods were always regular, occurring at 28 day intervals and lasting for 3 days. She had her menarche at 15 years of age. She was gravida 0, para 0. Her last menstrual period was 3 months prior to admission and she had had no period for four months previous to that date.

Physical examination revealed a thin, pale, female, of Spanish extraction, lying quietly in bed in no apparent distress. Examination of the head, eyes, ears, nose and mouth revealed no abnormalities. Examination of the neck revealed the trachea to be markedly shifted to the left. The examination of the chest showed the right side lagging on inspiration and fullness of the right infra-clavicular area. There was decreased vocal fremitus, and dullness on percussion at the right apex with flatness at the right base. Breath sounds were absent and voice sounds distant. On the left numerous crepitations and rhonci were auscultated. The apex of the heart was felt in the 5th intercostal space almost to the anterior axillary line. Heart sounds were regular in rate, rhythm and force. There were no murmurs, or thrills.

The abdomen was distended with marked shifting dullness. No masses were felt at that time and there was no tenderness or rigidity.

The extremities were negative showing no edema or pathological reflexes. The temperature on admission was 100 degrees, pulse 84, blood pressure 120 over 70. Impression was 1) right pleural effusion and 2) ascites.

---

*From the Department of Obstetrics and Gynecology, Metropolitan Hospital, New York City.

**Assistant, Division of Obstetrics and Gynecology, Delaware Hospital.

***Metropolitan Hospital, New York City.

Laboratory work on admission consisted of the following: urinalysis showed specific gravity 1.020, negative for sugar and albumen, and negative microscopically. Hemoglobin was 70% and red blood cell count was 4,000,000, blood sugar was 127 mgs and urea nitrogen was 12.5 mgs per hundred cc. Blood creatinin was 1.2 mgs, blood serology was negative. Icteric index was 5. Vandenberg and cephalin flocculation tests were negative. Phosphorous was 3.0. Phosphatase was 1.5. Total cholesterol was 216 mgs per hundred cc. Free cholesterol was 53-25%. Cholesterol esters were 163 mgs per hundred cc. Total serum protein was 5.9 with albumen 3.9 and globulin 2.0. The A to G ratio was 2.2.

On admission the x-ray revealed evidence of massive pleural effusion in the entire right side of the chest, with displacement of the heart, mediastinum and trachea to the left. X-ray of the abdomen revealed a haziness throughout the entire abdomen indicative of ascites.

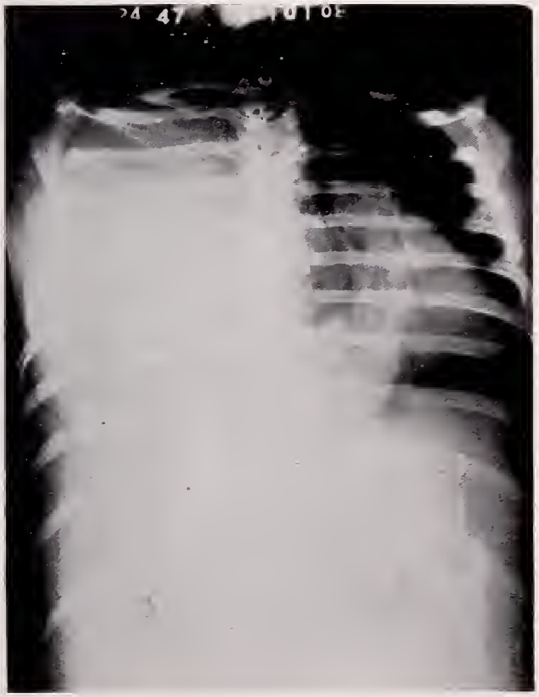


Figure 1
Pre-operative x-ray Rt. pleural effusion.

On October 25th a gynecologic consultation was requested and the following was noted: abdominal examination revealed massive ascites with a fluid wave and shifting dullness. There was a ballotable mass, hard, round, symmetrical and freely movable midway between the umbilicus and symphysis. Pelvic examination revealed normal external genitalia with female escutcheon, the introitus was nulliparous, the cervix was small, nulliparous in type, normal in position and with intact mucosa. The fundus was small and not definitely palpable. The mass was considered arising from the pelvis but the exact side could not be determined because of its extreme mobility. The impression of the consultant was that this patent had a classical Meigs' Syndrome.

On October 27th thoracentesis was done in the sixth interspace in the posterior axillary line. 200 cc of dark, straw-colored clear fluid was removed. The following day an abdominal tap was done and clear yellow-colored fluid removed. However, on October 29th an x-ray of the abdomen and chest revealed ascites and pleural effusion still present.

On November 23, 1947, a laporotomy through a left paramedian incision was done. On entering the peritoneal cavity about 10 litres of clear serous fluid was aspirated and a smooth symmetrical hard mass, about the size of a grapefruit was found to arise from the left meso-ovarium which was 5 centimeters in length. The right tube and ovary were normal and the uterus was infantile in size. The left infundibulo-pelvic ligament was clamped, cut, and stump was suture ligated with figure 8 chromic #1 suture. The tube and ovarian tumor were removed. The stump was peritonealized using #0 plain suture. The appendix was removed and the abdomen closed in layers. Condition of the patient was good. The patient made an uneventful postoperative recovery, her temperature never going above 100 degrees centigrade. She was out of bed on her third day. Sutures were removed on the seventh day and the patient was discharged to the clinic on the 13th day. The wound had healed by primary intention.

The pathologist reported that the specimen consisted of a Fallopian tube, thickened and tortuous, and that there was a solid mass about 15.5 centimeters in diameter, smooth, solid, symmetrical and fibrotic in consistency, weighing about 425 grams. Microscopically the diagnosis of solid fibroma of the ovary and chronic salpingitis was made. The pathological report also mentioned the chronic lymphoid appendix.

On November 11th the liver workup was repeated with the following findings: Icteric index 4, Vandenberg negative, cephalin negative, phosphorous 3.1, phosphatase 2.1, total cholesterol 184, free cholesterol 36-20%, cholesterol esters 148, total ser. protein 6.6, albumen 4.3, globulin 2.3, A to G ratio 1.9.

It was interesting to note the complete and rapid absorption of the chest fluid. Post-operatively there was absolutely no evidence that peritoneal fluid was re-formed. X-rays of the chest post-operatively showed massive pleural effusion still present the first day. On the second post-operative day the x-ray showed considerable clearing of the right lung field and some evidence of atalectasis of the right lower lobe. An x-ray taken on the 8th post-operative day showed complete absorption of the previously reported fluid with normal aeration throughout both lung fields.

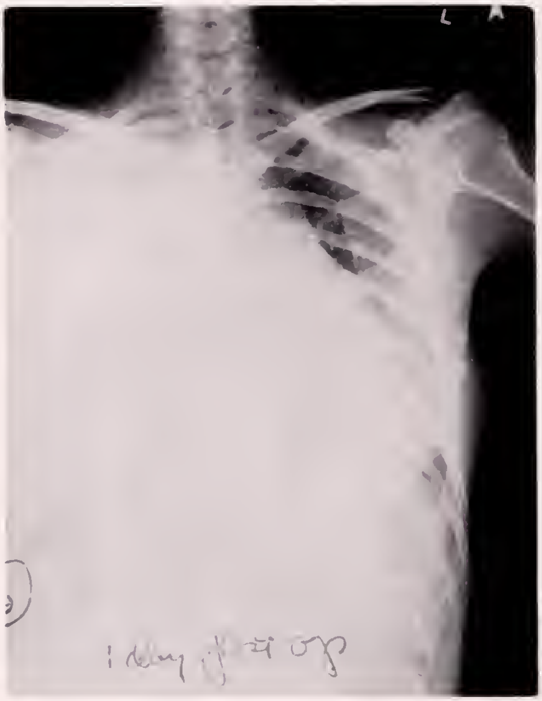


Figure 2
X-ray one day post-operative.

Summary and Conclusion

1) A classical case of Meigs' Syndrome is presented, the 46th in the literature.

2) A plea is made to include only benign ovarian lesions as Meigs' Syndrome. Otherwise, confusion in prognosis is a result.

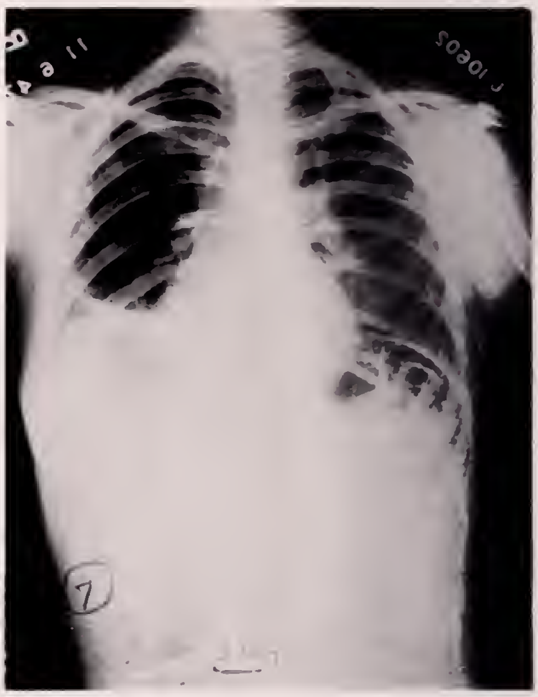


Figure 3
X-ray second day post-operative.

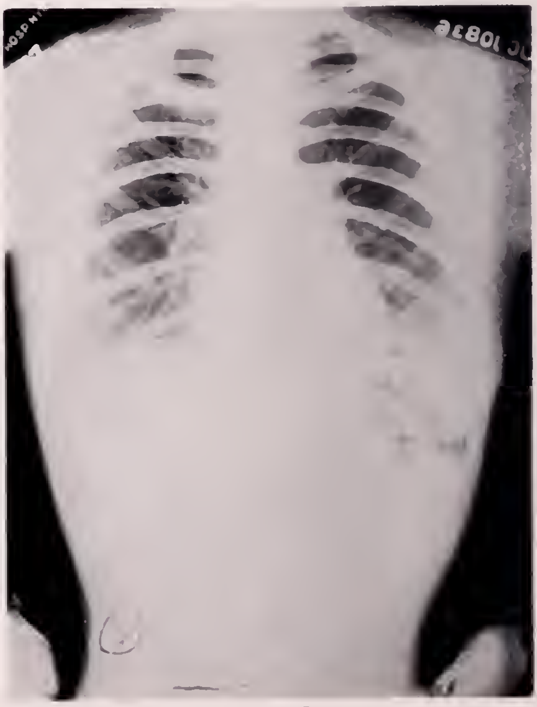


Figure 2
8 days post-operative Normal Aeration.

REFERENCES

1) Meigs, Joe V. and Cass, John W.: Am. J. Obst. & Gynec, 33:249, 1937.

2) Simon, Herbert J.: Am. J. Obst. & Gynec, 53:1042, 1947.

CORTISONE AND ACTH IN THE TREATMENT OF DISEASES OF THE EYE

Robert L. Dickey, M. D.,*
Wilmington, Del.

This paper summarizes the results of treatment of thirty-one patients with diseases of the eye using cortisone (compound E) or pituitary adrenal corticotropic hormone (ACTH) or a combination of the two drugs. The patients were treated between August 8, 1950 and December 23, 1950.

The original report by Hench[1] and his coworkers on the use of a steroid substance of the adrenal cortex (cortisone) and the adrenal corticotropic hormone of the pituitary (ACTH) in the treatment of certain rheumatic diseases aroused widespread interest in these hormones. The first report by Gordon and McLean[2] and by Olson[3] and his associates of their use in treatment of diseases of the eye appeared in the *JAMA* in April, 1950. Gordon and McLean[2] reported the use of ACTH in six patients. They felt the best results were obtained in cases of anterior and posterior uveitis. The second paper which appeared in the same journal by Olson[3] and his associates reported the use of ACTH in seven patients. Their best results were likewise reported in cases of uveitis, and they stated that hormonal treatment of uveitis was a definite advance in the therapy of this disease, since it was not limited by age or by complicating disease as is fever therapy. Henderson and Hollenhorst[4] reported results in the treatment of six cases with arthritis and eye inflammations. They reported especially good results in vernal conjunctivitis. Leopold summarized the pharmacology of these drugs in the Archives of Ophthalomolgy in August, 1950.[5] Dr. Harvey and his colleagues[6] of the Johns Hopkins Hospital reported favorable results in cases of nongranulomatous iritis, sympathetic ophthalmia, ocular tuberculosis and vernal conjunctivitis and two cases of iritis after herpes ophthalmicus.

Cortisone and ACTH became commercially available in Wilmington, Delaware in July, 1950 and ACTH was first used in this series in the treatment of a patient with acute nonspecific iritis, on August 8, 1950.

Method of Administration

Four methods of drug administration were used. The first and most commonly employed method was the instillation into the conjunctival sac of a drop of a 25% saline solution of cortisone every hour when the patient was awake. When improvement was noted, the dose was reduced to one drop every other hour, and, in some instances, the dose was reduced further on successive days. The patients treated by this method were seen as out-patients. The second method of administration of drug was the injection of 100 mgs. of ACTH in four divided doses daily for from seven to ten days with a gradual reduction of dose over a period of several days at the conclusion of treatment. A third method of administration of drug consisted of the subconjunctival injection of 0.05 to 0.1 cc. of a solution of 25 mgm. per cc. of cortisone in saline.[7] This injection was given every two or three days. This method of administration was only used in one patient, however. The fourth method of administration consisted of following the administration of ACTH by local cortisone instillations.

When it was decided to administer ACTH to a patient he was first referred to his family physician for a general physical examination. Diabetes, arteriosclerosis of an advanced degree, coronary artery disease, and hypertension were considered contraindications to the use of the drug.

An electrocardiogram also was done in the course of this examination. Blood sodium and potassium levels, fasting blood sugar level, and weight and blood pressure were determined. An eosinophile count was taken before treatment was initiated. These patients given ACTH were all hospitalized and weight, blood pressure, and mental status were determined daily. Fasting blood suger determinations, and circulating eosinophile counts were regularly observed, as were blood sodium and potassium levels.

Results

Thirty-one cases were treated. Of these, twenty-four were either cured or improved The remaining seven cases were unimproved It was felt that age and sex did not have any apparent influence on the result of treatment. The result of treatment was influenced by the type of disease being treated. The best results were obtained in cases of anterior uveitis and in cases of allergic conjunctivitis. Unfavorable results were obtained in a patient (case No. 1) with atopic dermatitis of the lids; and in a patient (case No. 5) with chronic iritis in a surgically aphakic eye on which a cyclodialysis had been done previously for aphakic glaucoma. Patient No. 17 was unimproved. He was treated with ACTH for acute posterior uveitis. Case No. 27 was unimproved; he had acute chroiditis in the macular region which was treated with ACTH. Case No. 29, a patient with post cataract extraction iritis was unimproved by local cortisone treatment. In a patient (case No. 7) with interstitial keratitis it was felt that the disease was improved by cortisone, however, systemic treatment was given concurrently. In case No. 13, a dendritic ulcer of the cornea, cauterization of the ulcer was done also.

---

*Assistant in Ophthalmology, Delaware Hospital.

There were several cases with results which appeared to be startling in nature. One patient with optic neuritis (case No. 9) had 5/400 vision at the onset of treatment and two weeks after treatment had 20/20 vision. Several of the cases of acute iritis of short duration improved remarkably well in a very short period of time.

It was found that the local instillation of cortisone did not influence posterior uveal tract inflammation. Two cases of posterior uveal tract inflammation treated by systemic administration of ACTH were not improved.

There was one patient, case No. 20, who definitely had a relapse of his iritis after cessation of treatment. He responded, however to three sub-conjunctival injections of cortisone. The case of chemical burn of both eyes which was treated with cortisone locally cleared up completely in spite of a severe burn of the conjunctiva and cornea. No symblepharon developed and the patient was able to return to his usual occupation two weeks after his injury.

Dr. Harvey and his colleagues in a report in the *Bulletin of the Johns Hopkins Hospital*[6] came to the following conclusion: "The most striking effect of these hormones has been in the prompt control of the inflammatory and exudative manifestations resulting from these various diseases of the conjunctiva and uveal tract. With parenteral administration there was observed uniformly a subsiding of pericorneal congestion, clearing of the vision, diminution of exudates and disappearance of the retinal edema. Cortisone applied locally has not influenced vitreous exudation or changes in the posterior uveal tract." This observation corresponds with the results obtained in the present series of cases.

Complications

Only one patient in this series showed a definite drug reaction. This patient, case No. 22, showed an allergic reaction when cortisone was instilled in the conjunctival sac. This allergic reaction disappeared when the drug was discontinued. This was the only patient in which the drug was discontinued because of a sensitivity reaction. In several other cases, however, treatment was discontinued because of lack of response to the medication.

Summary

Thirty-one cases in all were treated in this series. Twenty-four patients were improved; seven patients were unimproved. Six patients were given ACTH. Of these six, two were unimproved. Both of the patients that did not respond to ACTH had acute choroiditis. One patient with optic neuritis showed remarkable improvement after treatment with ACTH. Three cases of iritis treated with ACTH systemically and cortisone locally improved. One of these patients had a relapse of his iritis, but this was controlled in one week by sub-conjunctival injections of cortisone.

Twenty-five cases were treated with local instillations of cortisone. Five of these cases were unimproved. The diagnosis of the cases that were unimproved were: atopic dermatitis of the lids, chronic uveitis with hypopion ulcer, post cataract extraction iritis, allergic conjunctivitis, and chronic iritis following cyclodialysis in a surgically aphakic glaucomatous eye. Twenty cases given cortisone locally were improved. These included thirteen cases of iritis, two cases of allergic conjunctivitis and one case each of: Interstitial keratitis, chemical burn, dendritic ulcer of the cornea, recurrent catarrhal ulcer of the cornea, and excessive granulation tissue around an exposed integrated implant. One case of sensi-

Table I

Patient	Age	Diagnosis	Duration of disease prior to treatment	Drug Used	Length of Treatment	Time of beginning of improvement	Result of Treatment	Follow up time	Relapse
1. E. C.	76	Atopic dermatitis of the lids	2 weeks	Cortisone locally	30 days		Unimproved		
2. C. C.	32	Chronic iritis with secondary glaucoma	Iritis had been present and untreated for one year.	Cortisone locally, then systemic ACTH and Cortisone locally	60 days	7 days	Improved. Had long stormy course, however.	2 mo.	no
3. R. C.	12	Chronic uveitis complicated by Hypopion ulcer	Blind eye for six years following injury	Cortisone locally	8 days		Unimproved Eye enucleated		
4. A. D.	35	Acute iritis	3 days	Cortisone locally	21 days	9 days	Cured	1 mo.	no
5. T. D.	64	Chronic iritis Aphakia Secondary glaucoma (had cyclodialysis one month previously)	1 day	Cortisone locally	36 days		Unimproved Cortisone discontinued		
6. S. E.	62	Chronic iritis Aphakia, surgical	1 day	Cortisone locally	23 days	7 days	Cured	45 days	no
7. C. G.	20	Interstitial keratitis	12 days	Cortisone locally	120 days		Improved	Still under treatment	
8. A. G.	30	Chemical burn	3 days	Cortisone locally	33 days	2 days	Cured	2 mos.	no
9. J. H.	37	Optic neuritis	3 weeks	ACTH	11 days	11 days	Cured	75 days	no
10. H. H.	53	Chronic iritis	2½ years	Cortisone locally	7 days	3 days	Cured	4 mos.	no
11. M. H.	55	Acute iritis Secondary glaucoma	1½ years	Cortisone locally	26 days	4 days	Improved. Tension still high.	30 days	no
12. J. K.	78	Allergic conjunctivitis	1 week	Cortisone locally	1 week	3 days	Cured	1 week	no
13. T. L.	55	Dendritic ulcer	3 days	Cortisone locally. Ulcer cauterized with iodine	6 days	3 days	Cured	3 mos.	no
14. W. M.	46	Chronic iritis Surgical aphakia	1 day	Cortisone locally	21 days	4 days	Cured	1½ mos.	no
15. W. M.	46	Chronic iritis Surgical aphakia	1 day	Cortisone locally	28 days	6 days	Cured	3 mos.	no
16. F. M.	63	Chronic iritis Surgical aphakia complete retinal detachment	2 months	Cortisone locally	42 days	6 days	Improved (iritis)	Still under treatment	
17. G. M.	25	Acute choroiditis	1 week	ACTH	10 days		Unimproved		
18. L. M.	60	Acute iritis	2½ months	ACTH followed by Cortisone locally	15 days 30 days	3 days	Cured	4 mo.	no
19. E. P.	32	Recurrent catarrhal ulcer of cornea	1 day	Cortisone locally	11 days	1 day	Cured	1 mo.	no
20. S. R.	47	Acute iritis, severe. Secondary glaucoma	2 days	Cortisone locally ACTH Cortisone locally Cortisone by subconjunctival injection	23 days 17 days 30 days 5 days	6 days	Improved	Still under treatment	yes
21. H. R.	76	Acute iritis Secondary glaucoma	1 day	Cortisone locally	72 days	6 days	Improved Tension still high.	Still under treatment	

(Concluded on next page)

Table 1 Continued

Patient	Age	Diagnosis	Duration of disease prior to treatment	Drug Used	Length of Treatment	Time of beginning of improvement	Result of Treatment	Follow up time	Relapse
22. M. S.	72	Chronic allergic conjunctivitis	3 years	Cortisone locally	3 days		Unimproved Patient showed definite sensitivity to drops.		
23. S. M.	61	Superficial punctate keratitis	3 days	Cortisone locally	5 days	3 days	Cured	2 wks.	no
24. M. S.	40	Overgrowth of granulation tissue around exposed implant in socket	2 months	Cortisone locally	7 days		Improved	Still under treatment	
25. M. S.	40	Chronic iritis	Unknown. Recurrent attacks for years	Cortisone locally	19 days	10 days	Cured	2½ mo.	no
26. H. S.	55	Acute iritis Chronic simple glaucoma	1 day	Cortisone locally	9 days	4 days	Improved Tension controlled with miotics	1 wk.	no
27. K. S.	37	Acute choroiditis at macula	1 month	ACTH	10 days		Unimproved		
28. M. V.	45	Allergic conjunctivitis	8 years	Cortisone locally	21 days	8 days	Improved	1½ mo.	no
29. A. V.	88	Iritis, post cataract extraction	1 month	Cortisone locally	17 days		Unimproved		
30. A. W.	55	Chronic iritis	7 months. Continuous irritation, no treatment effective	Cortisone locally	61 days	5 days	Cured	3 mo.	no
31. J. W.	40	Chronic iritis	Recurrent for two years	Cortisone locally	21 days	2 days	Cured	3 mo.	no

tivity to cortisone drops improved when the drug was discontinued.

Conclusion

Although this series of cases is too small to draw any definite conclusions, some observations may be made. The treatment of anterior tract uveitis with local instillations of a twenty percent solution of cortisone is efficacious. Posterior tract uveitis should be treated with systemic administration of the drug. Although other papers have reported favorable results in the treatment of acute choroiditis, the results obtained in the treatment of two cases in this series were not encouraging. One case of optic neuritis treated with ACTH showed a remarkable improvement. Certain allergic conditions of the conjunctiva appear to be benefited from the instillation of cortisone. Very good results were obtained in the treatment of one patient with a chemical burn of the eyes.

In general, it appears that cortisone drops may be used in the eye for long periods of time without apparent complication.

REFERENCES

1. Hench, P. S.; Kendall, E. C.; Slocomb, C. H.; and Polley, H. F.: The Effect of a Hormone of the Adrenal Cortex (17-Hydroxy-11-Dehydrocorticosterone; Compound E) and of Pituitary Adrenocorticotropic Hormone on Rheumatoid Arthritis; Preliminary Report, Proc. Staff Meet. Mayo Clinic 24:181, 1949.
2. Gordon, D. M. and McLean, J. M.: Effects of Pituitary Adrenocorticotropic Hormone (ACTH) Therapy in Ophthalmologic Conditions, JAMA, 142:1271 (April 22) 1950.
3. Olson, J. A.; Staffenses, E. H.; Margulis, R. R.; Smith, R. W. and Whitney, E. L.: Effect of ACTH on Certain Inflammatory Diseases of Eye, JAMA, 142:1276 (April 22) 1950
4. Henderson, J. W. and Hollenhorst, R. W.: Effects of Cortisone on Certain Ophthalmic Diseases, Proc. Staff Meet. Mayo Clinic 25:490 (Aug. 16) 1950.
5. Leopold, I. H.: Pharmacology and Toxicology; Review of the Literature, Arch. Ophthal. 44:300 (Aug.) 1950.
6. Harvey, A. McG.; Howard, J. E. and Kattus, A. A.: The Effect of ACTH and Cortisone on Certain Diseases of the Eye in Which Hypersensitivity Plays a Role, Bull. Johns Hopkins Hosp. 87:461 (Nov.) 1950.
7. Koff, R.; Rome, S. Kasper, R.; Commons, R. D.; Button, R. and Starr, R.: Subconjunctival Injection of Cortisone in Iritis, JAMA, 144:1259 (December 9) 1950.

INTESTINAL OBSTRUCTION
Complicating The Third Trimester of Pregnancy

Charles R. Green, M. D.,*
Wilmington, Del.

Statistics as to the incidence of intestinal obstruction during pregnancy vary widely, possibly due to the rarity of the condition with the attendant difficulty of compiling a comprehensive series. Childe and Douglas (1) report one case in 40,000 pregnant women admitted to New York Hospital over an 11 year period. In commenting upon this report Speiser states that there have been five cases of acute intestinal obstruction in 6,822 obstetric admissions to the French Hospital. In Delaware Hospital over a period from 1/1/46 through 11/30/50 inclusive there were 10,637 obstetric admissions. This is the only case of this type seen during this period.

---

*Intern, Delaware Hospital.

The problem presented by such cases is the attendant high maternal and foetal mortality. This may be obviated to some extent by early diagnosis, adequate surgical treatment, and appropriate post-operative therapy.

Delaware Hospital case #162358. This patient, a 22 year old white primigravida whose last menstrual period was 11/15/49 and whose expected confinement date was 8/23/50, was admitted to the Delaware Hospital 7/27/50 with chief complaint of intermittant pain about the umbilicus. She had had twinges of periumbilical pain for the preceding two weeks but there had been no progression until 4:00 A. M. on the date of admission, when she was awakened by a severe, sharp, stabbing periumbilical pain. This was associated with nausea and vomiting. There had been no constipation or diarrhea preceding this episode.

The preceding year on 5/19/49 she had undergone a left salpingoophorectomy, appendectomy, presacral sympathectomy and dilatation of cervix. Postoperative course was uneventful at that time.

Review of systems revealed pain in the right flank and right costovertebral angle but no dysuria. On physical examination patient had pain over the lower left chest anteriorly and tenderness to touch in the periumbilical and epigastric areas. There was exquisite tenderness in the right flank and suggestion of a mass in this area. There was tenderness to gentle pressure in the right costovertebral angle. At this time there did not seem to be any abdominal rigidity although the uterus was very firm and hyperirritable. Rectal examination revealed no dilatation of the cervix and no effacement. Station of head was minus 2. Periumbilical pain was experienced when head was pushed up. Fetal heart sounds were heard in the left lower quadrant — rate 132/min. Temperature was 98°, pulse 80, respiratory rate 20. Blood pressure was 145/100.

Blood studies revealed a normal red count with a white count of 19,000 of which 81% were segmented neutrophils and 14% were nonsegmented neutrophils. Admission urinalysis showed plus 1 albumin and a trace of acetone. Otherwise negative.

At this point pyelitis was considered, but a cystoscopy and a retrograde pyelogram revealed only hydronephrosis of pregnancy. Culture of urine showed no growth after 48 hours.

The patient's temperature and pulse began to rise and within a few hours reached 101° and 112 respectively. At this point a second blood count revealed a white count of 26,200, with 80% segmented neutrophils, 16% nonsegmented neutrophils, 3 lymphocytes, and 1 monocyte with marked toxic degeneration of the white cells. Clinically at this time patient was in acute distress with a firmly contracted, irritable uterus. There was abdominal distention with marked rebound tenderness and absent peristalsis Patient was vomiting and stated she had not been passing anything via rectum during the day. A diagnosis of intestinal obstruction was made, a Wangensteen continuous gastric suction was begun, and patient was taken to the operating room, service of Dr. D. J. Preston. Date 7/28/50.

Under pentothal and cyclopropane anesthesia the abdomen was opened. The uterus was approximately the size of a full term pregnancy and showed no gross abnormality in itself. There was considerable excess of brownish and bloody serous fluid in the abdominal cavity above and at the sides of the uterus. Multiple fibrous adhesions in the right lower abdomen bound down the cecum and small intestine to the anterior abdominal wall. After separation of these adhesions, the gangrenous loop of the small bowel was detected in the upper right abdomen. This was thought to be jejunum and the gangrenous segment measured approximately 12 inches in length. The fluid in the upper abdomen had a foul odor indicating early peritonitis and there was some fibrinous exudate on the adjacent loops of bowel which appeared red and edematous. A thin tough band of fibrous adhesions apparently caused the complete obstruction of the small bowel. Upon division of this adhesion the obstruction was relieved, but the gangrenous bowel required resection. End-to-end anastomosis was performed. The patient's condition was extremely critical, with pulse running between 120 and 160 throughout the operation.

Following the procedure the patient's condition remained critical, pulse maintaining its high level and temperature rising to 104° (R). Patient was administered aqueous penicillin 200,000 u T.I.D., dihydrostreptomycin 0.5 gm. q. 8 hours and aureomycin 100 mgm. I.V. every 4 hours. In addition fluid balance was maintained with 5% glucose in water and saline and small amounts of clear liquids were given as tolerated on first postoperative day. It was necessary to reinsert Levine tube on the second postoperative day to relieve distention, but this was removed in a few hours following improvement. Temperature and pulse were down to normal on day following operation.

There was, however, question as to the viability of the fetus. Fetal motion was not apparent to the mother nor were fetal heart sounds apparent. On 8/3/50 fetal heart sounds were heard (left lower quadrant 120/min.) for the first time since day of operation. Recovery was rapid and the patient was discharged on 8/7/50 in a much improved condition.

Patient was readmitted 8/20/50, labor having begun at 1:00 A. M. that date. She progressed rapidly through a normal labor and was delivered by low forceps with a right mesio-lateral episiotomy at 8:20 A. M. date of admission of a normal living female infant weighing 5 pounds 13 ounces. The patient's postpartum course was uncomplicated and afebrile, and she was discharged, condition satisfactory on 8/27/50.

Conclusions

Intestinal obstruction in pregnancy usually occurs in the third trimester and in well over 70% of the cases is a result of postoperative adhesion.

One case with successful operation and subsequent delivery is reported.

REFERENCE

1. Childe and Douglas: Am. J. Obst. and Gyn.: 47:213, 1944

CLINICOPATHOLOGIC CASE RECORD

James Ripepi, M. D.,*
George W. Martin, Jr., M. D.,*
and
Park W. Huntington, Jr., M. D.**
Wilmington, Del.

Presentation of Case***

Dr. Martin: A fifty-six year old white male was admitted to the Delaware Hospital on 12/27/49 with the history of nausea, vomiting, abdominal distention, and mild chest pain of two weeks duration. (Ankle edema was associated with mild substernal pain, but there was no evidence of dyspnea, orthopnea, or night sweats.) On the morning of admission upon arising from bed it was noticed by his wife that the patient did not seem as wide awake as usual and appeared to be going into coma, so she called the local medical doctor who administered 30 U of insulin (2:1 mixture) and sent the patient to the hospital. Enroute to the hospital the patient vomited some brownish-black material. The patient had had tarry stools during the week prior to admission.

Past medical history: The patient was a known diabetic of approximately twelve years duration, though he was considered in fairly good health until the onset of the present illness. He had been taking 40 U of 2:1 insulin mixture daily.

An operation for cataract of the right eye was performed in August, 1947, and a cataract of the left eye was extracted in April, 1949 in the Delaware Hospital.

From March to May, 1948 the patient was studied in the Delaware Hospital because of complaints of pains in the back. X-rays revealed a non-functioning gall bladder, enlarged liver, demineralization of all the vertebrae, and no evidence of any pathologic changes in the stomach or duodenum. During this hospitalization the patient suffered an antero-septal myocardial infarction.

Family history: Father died of gall bladder disease at age of 71. Otherwise, essentially negative.

Physical examination: Blood pressure 160/90 — Pulse 86 regular. Patient was a white male of medium build who was comatose, cyanotic and whose respirations were slow and irregular. The skin was markedly pigmented, a brownish-bronze color. Other positive physical findings included: a few rales in both lung bases; distended abdomen with a non-tender liver 6 finger-breadths below the costal margin; 1 plus pitting edema of both ankles and pre-tibial regions. The remainder of the physical findings were essentially negative.

---

*Internes, Delaware Hospital.

**Resident in Pathology, Delaware Hospital.

***Delaware Hospital Case No. 148345 presented at Staff Clinical Pathology Conference.

Laboratory data: On admission—red blood count 4.1 million; hemoglobin 16.9 gm—108%; hematocrit 53%; white blood count 9800; differential-polys seg 69, polys non-seg 13, lymphocytes, 15, monocytes 2, eosinophiles 1. Blood sugar 10 mg.%; blood urea nitrogen, 12.4 mg.%; carbon dioxide combining power 75%. Mazzini plus 1 and Wassermann negative. Urinalysis: specific gravity 1.020; color—dark amber; alkaline reaction; albumin 1 plus; negative sugar and acetone; microscopic—occasional renal cells with a few mucous threads. 12/29 Sodium ions — 132 meq; K ions 6.4 meq.; plasma chloride—520 mg.%; icteric index, 42.

Electrocardiogram showed left heart strain.

Course in hospital: Upon admission glucose was administered and the patient rapidly became rational. However, he soon became nauseated and vomited dark brownish-black material. His diabetes was controlled during this hospitalization, but his course was steadily downhill. His nausea and vomiting of the dark material persisted. Four days after admission the patient died.

DIFFERENTIAL DIAGNOSIS

DR. RIPEPI: The salient features of the problem under discussion are:

1. Patient is a known diabetic.
2. Patient is in hypoglycemic shock.
3. Hemoconcentration.
4. Nausea and vomiting of black material and passage of tarry stools.
5. Peculiar bronze pigmentation of skin.
6. Hepatomegaly.

First the patient's peculiar bronze pigmentation arouses in the adrenal-minded clinician of today that here, perhaps, we are dealing with a derangement of the adrenal gland. The association of diabetes mellitus and bronze pigmentation causes one to pause a while and recall to mind the not too rare entity of "Bronze Diabetes" or more properly Hemochromatosis. This disease is considered by many investigators to be a rare disturbance of iron pigment metabolism usually occurring in males past middle life. It is characterized by marked deposition of hemosiderin pigmentation of the skin and viscera, particularly the liver and pancreas and in most cases by diabetes. The latter is believed to be due to the pancreatic fibrosis causing the functional disturbance.

The patient certainly is within the chronological span mentioned. He also is a diabetic and the hepatomegaly may represent a cirrhosis which is part of the fibrotic reaction of the liver to the pigment deposits.

A skin biopsy performed on this patient gave a Prussian Blue reaction revealing the presence of large amounts of hemosiderin. Clinically, we can make the diagnosis of hemochromatosis. The hypoglycemic shock in retrospect was probably the product of the energetic treatment with insulin.

The vomiting of brownish material and the passage of tarry stools are probably the result of esophageal varices which frequently occur from obstruction to the portal circulation. This vomiting may also have caused the hemoconcentration reported.

The hepatomegaly may well be the result of the associated fibrosis accompanying the deposition of pigment around the portal areas, giving rise to cirrhosis. Primary carcinoma of the liver is seen as a terminal complication of about 7-10% of reported cases of hemochromatosis. Unfortunately, a liver biopsy was never performed in this case and the nature of this hepatic mass must remain in obscurity.

SUMMARY

This patient is suffering from what clinically is hemochromatosis. His diabetes was a simple by-product of this condition, while the hypoglycemia was an unfortunate event in the therapeutic management. The hepatic mass is too large, in my opinion, to be on the basis of cirrhosis of the liver alone and I personally would be more predisposed to a diagnosis of hepatic malignancy.

Clinical Diagnosis

1. Hemochromatosis
2. Primary carcinoma of liver
3. Diabetes mellitus, secondary
4. Esophageal varices, secondary

Anatomical Diagnosis

1. Hemochromatosis
2. Primary liver cell carcinoma

Pathological Discussion

Dr. Huntington: Autopsy revealed a 56 year old white male. The sclerae were icteric. The extremities were bronze in color and rough. The veins of the abdomen and thorax were congested.

On opening the body the liver filled the greater part of the peritoneal cavity extending 10 cm. below the xiphoid and 7 cm. below the right costal margin. The peritoneal cavity contained approximately 100 cc. of dark cloudy fluid. The right pleural cavity contained 300 cc. of blood tinged fluid, the left 200 cc. of a markedly blood tinged fluid.

The heart weighed 400 gms. The valves had an icteric discoloration and the anterior coronary vessel was occluded. There was basal congestion of the right lung. The liver weighed 3150 gms. The left lobe was very granular and the right lobe showed fibrosis. On section a necrotic thrombus was found in the portal vein. The cut surface of the liver was nodular, firm, and green-yellow in color. The spleen showed perisplenitis and fibrosis. The pancreas was atrophic. The kidneys weighed 210 gms. each, and there was slight cloudy swelling and congestion. The esophagus revealed melanosis, the stomach a 5 mm. ulcer at the cardiac end. There was marked general lymphadenopathy and hyperplasia.

On microscopic section, the liver showed marked fibrosis, hemochromatosis and diffuse liver cell carcinoma extending through the fibrous portion and out into the portal vein. Tumor was also found in lymph nodes. Evidence of hemochromatosis was also found in the aorta, spleen, pancreas, adrenals, kidneys, and lymph nodes. The pancreas showed marked atrophy from fibrosis. The esophagus revealed necrotic changes and melanosis, but no positive iron pigment.

Pathological Diagnosis

Hemochromatosis

Primary liver cell carcinoma

Committee on Trauma
American College of Surgeons
THE CARE OF HAND INJURIES[*]

The Care of Hand Injuries[*]

VI

Open Fractures

I *Protection of the Hand* (Abstract of Article I)

The first-aid care of wounds of the hand is directed fundamentally at protection. It should provide protection from infection, from added injury, and from future disability and deformity. The best first-aid management consists in the application of a sterile protective dressing, a firm compression bandage and immobilization by splinting in the position of function.[‡] No attempt should be made to examine, cleanse, or treat the wound until operating room facilities are avaliable.

II *Requirements of Early Definitive Treatment* (Abstract of Article II)

Early definitive care requires thorough evaluation of the injury with respect to its cause, time of occurrence, status as regards infection, nature of first-aid treatment and appraisal of structural damage. For undertaking definitive treatment the conditions required are a well-equipped operating room, good lighting, adequate instruments, sufficient assistance, complete anesthesia, and a bloodless field. Treatment itself consists of aseptic cleansing of the wound, removal of devitalized tissue and foreign material (exercising strict conservation of all viable tissue), complete hemostasis, repair of injured structures, protecting nerves, bones and tendons, and providing maximum skin coverage, and application of firm protective dressing to maintain the optimum position. After-treatment consists of protection, rest and elevation during healing and early restoration of function by directed active motion.

---

[*] Note: This is the sixth of a series of articles on "The Care of Hand Injuries." This material is prepared by ‡the American Society for Surgery of the Hand and is distributed by the Committee on Trauma, American College of Surgeons, through its Regional Committees.

[‡] Position of function or position of grasp: wrist hyperextended in cock-up position; fingers in mid-flexion and separated; thumb abducted, slightly forward from hand and slightly flexed.

III *Surface Injuries* (Previously circulated)

IV *Lacerated Wounds* (Previously circulated)

V *Fractures and Dislocations* (Previously circulated)

VI *Open Fractures*

Major wounds of the hand may be caused by crushing or tearing injuries, injuries from explosions, or by the impact of foreign bodies. Such wounds may involve damage to skin by burning or avulsion, laceration of soft tissues, and open injuries of bones or joints. The purposes of early treatment are:

(1) Relief of pain and shock
(2) Arrest of hemorrhage
(3) Protection against infection and further injury
(4) Removal of foreign bodies and dead tissue
(5) Conservation and restoration of damaged structures
(6) Early healing
(7) Restoration of function

A. First-aid treatment

1. Application of voluminous sterile dressing without interference with the wound, the hand being placed in the position of function.
2. Hemostasis can usually be obtained by pressure gently applied to such a dressing. A tourniquet is rarely needed, but may be employed briefly to check brisk, continuing blood loss.
3. Shock and pain may require appropriate treatment.
4. The hand, in initial dressing applied as above, is splinted in position of function for transportation to adequate surgical facilities. (See Article II)

B. Definitive treatment

1. If bones or joints are thought to be involved, preliminary x-ray views are made without disturbing the initial dressing.
2. Patient is treated systemically for pain, shock and hemorrhage; antibiotics and tetanus antitoxin (or toxoid booster) are administered, and the patient prepared for operation.
3. In operating room, with patient anesthetized, dressing is removed.
4. With the wound carefully protected, the arm, forearm, and hand are scrubbed, shaved and draped.
5. The skin wound and the area about it are carefully and gently cleansed with soap and water or mild detergent (no antiseptics) and the entire wound examined. Bleeding vessels are ligated.
6. Foreign material and devitalized tissue are accurately trimmed away.

   This procedure aims at thoroughness, but must strictly conserve the maximum of viable tissue. It is particularly important to preserve skin and all bone fragments which are not completely free and displaced.
7. Repair of soft tissue injuries is governed by criteria of length of time since injury and of the degree and nature of contamination. (See Article IV) Where conditions are favorable (i. e., in relatively clean wounds not more than three or four hours old), initial repair may be effected within limitations described in Article IV.

   Even in unfavorable cases, severed nerves should be united if possible, or at least identified by long sutures of stainless steel.
8. Dislocations of joints, if open in the wound, are reduced.
9. Bone fragments in the open wound are restored as nearly as possible to normal position, but without fixation by foreign material. In some instances the employment of stabilization with a minimum of stainless steel wire is justifiable if required to maintain reduction.
10. Maintenance of reduction of open fractures may usually be obtained by skeletal traction or appropriate splinting. (See Article V). If required, pins for bone fragment fixation or skeletal traction are applied as there described.
11. Maximum skin closure is effected. (See Article IV). Particular care is taken to cover bones, joints, tendons and nerves. Where required, pedicle skin grafts (local or from abdominal wall) may be

used for coverage unless established or inevitable infection forbids.

12. Pressure dressing is applied and the hand splinted as required for optimum control of its repaired injuries, approximating as closely as possible the position of function. (See Articles IV and V). Flat splinting is to be avoided. Uninjured parts of the hand should be left free for movement. The hand is kept elevated.

C. Subsequent dressings

These are managed with regard to the following factors named in the order of their importance: (a) Control of infection, adequate drainage; (b) Establishment of bony union and joint healing; (c) Early completion of skin coverage and healing.

1. The establishment of infection in the wound may require early and frequent dressings to insure its control. These should be done under aseptic conditions and in such manner as not to disturb the corrected position of injured bones or joints.
2. Large skin defects should be covered by grafting at the earliest moment compatible with the maintenance of position of corrected bone and joint injuries. (See Article III).

D. Restoration of function

Following healing of skin and soft tissues and firm union of bony structures, as much function as possible should be restored by directed active use of the hand, therapeutic exercises and occupational therapy.

Reconstructive surgery is often required after such injuries to permit maximum restoration of function. Such reconstruction will be less extensive and less formidable if the early management of the injury is judiciously and carefully carried out.

METHADONE

Army Develops Perfect Substitute for Morphine

Perfection of a new synthetic narcotic to replace morphine was announced recently by Dr. Henry K. Beecher, civilian consultant to the Army Surgeon General. Dr. Beecher is Professor of Research in Anesthesia at the Medical School of Harvard University and Chief of the Department of Anesthesia at Massachusetts General Hospital.

Just arrived from Korea where the new drug, methadone, was tested at the farthest forward evacuation hospital near Hamhung on hundreds of American and allied wounded, Dr. Beecher declared that the field tests verified the findings that have been made in thousands of postoperative cases during the last three years at Massachusetts General Hospital.

The story of methadone goes back to the day in 1945 when the Army took over the I. G. Farben plant in Germany. Preliminary work had been done there and the information turned over to the Research and Development Board of Army Medical Service. During the postwar years the Surgeon General's Office has worked closely with other interested groups to perfect the new synthetic which has the same effect as morphine, milligram for milligram, and which is made from nitriles derived from nitrogen and hydrocarbons.

Final validation has been made under the most rigid conditions and methadone can be used either as a substitute or interchangeable with morphine. The racemic form of methadone is now on the market and is being made by several manufacturers for the government. The form known as Levo-Iso is the best to date.

An interesting sidelight is that methadone may be less habit forming and will probably be a great help in curing morphine addicts. Tests at the U. S. Public Health Service for addicts at Lexington, Kentucky, showed the drugs relieve the terrible sufferings of patients being taken off morphine.

While the pain killing power is as great as that of morphine its side effects are even better, since Levo-Iso produces far less nausea and vomiting. It has the same effect in depressing respiration as does morphine. While generally administered subcutaneously, it may be given intravenously or by mouth.

The Army operates under the most exacting and variable conditions throughout the world. Accordingly, before making a final appraisal of methadone it was felt that the ultimate test lay in using it in the most demanding environment we ever expect to en-

(Concluded on Page 23)

✚ Editorials ✚

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building

Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place

M. A. Tarumianz, M. D. ....Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given. The reproduction in whole or in part, for commercial purposes, of articles appearing in The Journal will not be permitted.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 23 January, 1951 No. 1

Facts About A.M.A. Dues For 1951

1. American Medical Association membership dues for 1951 are $25.00.

2. Fellowship dues for 1951 are $5.00 and are exclusive of membership dues.

3. American Medical Association membership dues are levied on "active" members of the Association. A member of a constituent association who holds the degree of Doctor of Medicine or Bachelor of Medicine and is entitled to exercise the rights of active membership in his constituent association, including the right to vote and hold office as determined by his constituent association, and has paid his American Medical Association dues, subject to the provisions of the By-Laws, is an "active" member of the association.

4. American Medical Association membership dues are payable through the component county medical society or the constituent state or territorial medical association, depending on the method adopted locally.

5. Fellowship dues are payable directly to the headquarters of the American Medical Association, 535 North Dearborn Street, Chicago 10, on receipt of the bill for such dues.

6. A dues paying, active member is eligible for Fellowship and may request such status by direct application to the Secretary of the American Medical Association. Applications for Fellowship are subject to approval by the Judicial Council of the Association.

7. Commissioned medical officers of the United States Army, the United States Navy, the United States Air Force or the United States Public Health Service, who have been nominated by the Surgeons General of the respective services, and the permanent medical officers of the Veterans Administration, who have been nominated by its Chief Medical Director, may become Service Fellows on approval of the Judicial Council. Service Fellows need not be members of the component county or constituent state or territorial associations or the American Medical Association and do not pay Fellowship dues. They do not receive any publication of the American Medical Association except by personal subscription. If a local medical society regulation permits, a Service Fellow may elect to become an active member of a component and constituent association and the American Medical Association, in which case he would pay the same membership dues as any other active member and receive a subscription to The Journal of the American Medical Association.

8 . An active member of the American Medical Association may be excused from the payment of American Medical Association membership dues when it is deemed advisable by the Board of Trustees, provided that he is excused from the payment of full dues by his component society and constituent association.

The following may be excused in accordance with this provision: a) members for whom the payment of dues would constitute a financial hardship as determined by their local medical societies; (b) members in actual training for not more than five years after graduation from medical school, and (c) members who have retired from active practice.

9. Active members of the American Medical Association are not excused from the payment of American Medical Association membership dues by virtue of their classification by their local societies as "honorary" members or because they are excused from the payment of local and state dues. Active members may be excused from the payment of American Medical Association membership dues only under the provision described in Paragraph 8 above.

10. American Medical Association membership dues include subscription to The Journal of the American Medical Association. Active members of the Association who are excused from the payment of dues will not receive The Journal except by personal subscription at the regular subscription rate of $15.00 a year.

11. Member Fellows may substitute one of the special journals published by the Association for The Journal to which they are entitled as members. A Fellow who substitutes a special journal will not also receive The Journal.

12. A member of the American Medical Association who joins the Association on or after July 1 will pay membership dues for that year of $12.50 instead of the full $25.00 membership dues.

13. An active member is delinquent if his dues are not paid by Dec. 31 of the year for which dues are prescribed and shall forfeit his active membership in the American Medical Association if he fails to pay the delinquent dues within thirty days after the notice of his delinquency has been mailed by the Secretary of the American Medical Association to his last known address.

14. Members of the American Medical Association who have been dropped from the Membership Roll for nonpayment of annual dues can not be reinstated until such indebtedness has been discharged.

15. The apportionment of delegates from each constituent association shall be one delegate for each thousand (1,000), or fraction thereof, *dues paying active members of the American Medical Association* as recorded in the office of the Secretary of the American Medical Association on December 1 of each year.

Sincerely yours,
George F. Lull, M. D.,
Secretary and General Manager.

OVERHOSPITALIZATION

There is a natural tendency for people to want to "get their money back" when they have paid for insurance to cover some hazard in their lives. Some forms of insurance, notably life insurance, are free from this temptation. However, hospitalization insurance is one form in which the problem of overutilization and misuse is a real problem.

The difficulty lies in the fact that the circumstances under which the insurance carrier is liable cannot be defined exactly. Hospital insurance premiums are based on the expectation that major illnesses will be covered, minor illness and diagnostic work will not. The severity of sickness and the actual need for hospital care are matters of judgment, and often the patient's insistence is the factor which decides the issue.

The premium necessary to support insurance which would be able to hospitalize every patient, no matter how trivial the illness, would be prohibitive. It is therefore the custom to sell hospital insurance at a cost which is calculated to cover the expenses of only the seriously ill, those people who would be hospitalized even though they were to pay the bill directly.

If patients are hospitalized with minor illnesses or for diagnostic procedures, hospital insurance companies will find it necessary to charge higher premiums in order to remain solvent. If overhospitalization becomes a widespread practice, the costs will rise until the companies are priced out of business.

Dr. Paul R. Hawley has recently called attention to the dangers of the situation, particularly as it affects the operations of the various Blue Cross agencies. Blue Cross in general, the country over, has done a remarkable job in keeping pace with the rising costs of hospital operation.

Premiums have increased only slightly as compared with the rise in hospital costs. However, no insurance system can withstand the inroads of mounting legitimate costs and the millstone of overutilization at the same time. Now is the time to curb abuses, if the voluntary system of insurance is to survive.

Two classes of people are vitally interested in voluntary hospital insurance; each class must cooperate with the other in order to make the system a continuing success.

The policyholders and potential patients have a large stake in the enterprise. It is essential that they be informed so that they may do all in their power to promote proper use of the insurance, and thus preserve their protection against the cost of serious illness.

The doctors are interested, too. Voluntary insurance is a tremendous aid to the practice of medicine, and it is also the principal bulwark against the possibility of compulsory government insurance.

The insured persons and the doctors are not only the ones with the greatest interest in the problem, but they are also the only ones who can solve it. They must do this in cooperation with each other. Public education will be necessary. That portion of the public which is forehanded and provident enough to provide themselves with voluntary prepaid hospital care will readily understand the necessity of operating it in a manner which will maintain solvency, and keep the cost low enough so that all may afford it.

Editorial, *J. Ind. S. M. A.*, December, 1950.

METHADONE

(Concluded from Page 20)

counter. Actually, two field tests were made in the Far East, one by three doctors at Tokyo Army Hospital who administered methadone on a round-the-clock basis; the other by Dr. Beecher himself at the evacuation hospital near Hamhung. In the field it was used preoperatively in from minutes to hours of the time men were wounded. One major objective of the Korean field tests was to see whether it would stand up under the stress and strain of abnormal conditions. It did, even when the temperature was 27 degrees below zero. Methadone has the same rapidity and duration of effect as morphine.

At the Anzio beachhead where he spent 75 days, Dr. Beecher found that men with severe wounds are not always in pain. The reason for this, he said, is that emotion can block pain. He further stated that only one-fourth of seriously wounded men feel enough pain to want a pain-relieving drug.

The new discovery makes the United States quite independent of foreign opium markets of Asia and the Near East.

National Conference

The twenty-fourth annual meeting of the National Conference on Medical Services will be held Sunday, February 11, 1951, in the Red Lacquer room of the Palmer House in Chicago. The meeting is of special importance to presidents, secretaries, and public relations personnel of state and county medical societies.

BOOKS RECEIVED

The receipt of the following books is acknowledged and this listing must be regarded as a sufficient return for the courtesy of the sender. Books that appear to be of particular interest will be reviewed as space permits. Additional information in regard to all listed books will be gladly furnished on request.

Members of the Society who wish to review any of the books listed herein can procure same at the office of the Editor, 822 North American Building, Wilmington, between 4:00 and 4:30 P. M., Monday through Friday.

Atlas of Peripheral Nerve Injuries by William R. Lyons Ph.D. Associate Professor of Anatomy, University of California and Barnes Woodhall, M. D. Professor Neuro Surgery, Duke University, Pp. 339. Cloth. Price $16.00. Philadelphia: W. B. Saunders Company, 1949.

Researches in Binocular Vision. By Kenneth N. Ogle, Phd. Research Consultant-Ophthalmology Mayo Foundation, Pp. 345 with 182 illustrations. Cloth. Price $7.50. Philadelphia: W. B. Saunders Company, 1950.

Thoracic Surgery. By Robert H. Sweet,

M. D., Associate Professor of Clinical Surgery, Hartford University. Pp. 345 with 155 illustrations. Cloth. Price $10.00. Philadelphia: W. B. Saunders Company, 1950.

Techniques in British Surgery. Edited by Rodney Maingot. Pp. 734 with 473 illustrations. Cloth. Price $15.00. Philadelphia: W. B. Saunders Company, 1950.

Plastic and Reconstructive Surgery. By Ferris Smith, M. D., Consultant Plastic Surgery Blodgett Memorial Hospital, Grand Rapids, Michigan. Pp. 895 with 592 illustrations. Cloth. Price $15.00. Philadelphia: W. B. Saunders Company, 1950.

A Text Book in X-ray Diagnosis. By British Authors — Four Vols. Second Edition. Vol. 3—The Abdomen. Pp. 830 with 694 illustrations. Cloth. Price $........ Vol. 4, Pp. 592 with 555 illustrations. Cloth. Price $15.00. Philadelphia: W. B. Saunders Company, 1950.

Text Book of Endocrinology. Edited by Robert H. Williams, M. D., Professor of Medicine, University of Washington, Pp. 793 with 168 illustrations. Cloth. Price $10.00. Philadelphia: W. B. Saunders Company, 1950.

Text Book of Gynecology. By Author Hale Curtis, M. D., Emeritus Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University; and John William Huffman, M. D., Associate Professor of Obstetrics and Gynecology. Northwestern University. Sixth Edition. Pp. 799 with 466 illustrations. Cloth. Price $10.00. Philadelphia: W. B. Saunders Company, 1950.

The American Nurses Dictionary. By Alice L. Price, B.S. R.N., Instructor in Nursing Arts, Columbia Hospital, Milwaukee, Pp. 656. Cloth. Price $3.75. Philadelphia: W. B. Saunders Company, 1950.

Principles and Practices of Surgery By Jacob K. Berman, M. D., Associate Professor of Surgery, Indiana University. Pp. 1378 with 429 illustrations. Cloth. Price $15.00. St. Louis: C. V. Mosby Company, 1950.

Management of Obstetrics Difficulties. By Paul Titus, M. D., Obstetrician and Gynecologist. St. Margaret Memorial Hospital, Pittsburgh, Pa. Fourth Edition. Pp. 1046 with 446 illustrations. Cloth. Price $14.00. St. Louis: C. V. Mosby Company, 1950.

Eyes and Industry (Formerly Industrial Ophthalmology) by Hedwig S. Kuhn, M. D., Industrial Ophthalmologist, Hammond, Indiana, Second Edition. Pp. 378 with 151 illustrations. Cloth. Price $8.50. St. Louis: C. V. Mosby Company, 1950.

Physiology of the Eye — Clinical Application. By Francis Heed Adler, M. D., Professor of Ophthalmology, University of Pennsylvania. Pp. 709 with 319 illustrations. Cloth. Price $12.00. St. Louis: C. V. Mosby Company, 1950.

Professional Adjustments. By Sister Mary Isadore Lennon, R.S.M., R.N., M.S., Director of St. Johns Hospital School of Nursing, St. Louis. Second Edition. Pp. 362. Cloth. Price $3.50. St. Louis: C. V. Mosby Company, 1950.

Physicology: Principles and Applications. By Marian East Madigan, Ph.D., Research Department, Milwaukee Vocational and Adult Schools. Pp. 403. Cloth. Price $4.25. St. Louis: C. V. Mosby Company, 1950.

Principles of Internal Medicine, Editor-in-Chief, T. R. Harrison, M. D., Professor of Medicine, University of Texas, Pp. 1590 with 245 illustrations. Cloth. Price $12.00. Philadelphia: Blakiston Company, 1950.

Natural Child Birth: Manual for Expectant Parents. By Frederick W. Goodrich, Jr., M. D., Pp. 176. Cloth. Price $2.95. New York: Prentice-Hall, Inc., New York, 1950.

Radium Therapy: Its Physical Aspects. By C. W. Wilson, Ph.D., Physicist Westminster Hospital. Pp. 224 with 97 illustrations. Cloth. Price $6.00. Washington, D. C.: Sherwood Press, 1948.

Hand Book of Obstetrics and Diagnostic Gynecology: By Leo Doyle, M. D. Pp. 244. Illustrated. Paper. Price $2.00. Palo Alto, California: University of Medical Publishers, 1950.

The Science of Health. By Florence L. Meredith, M. D. Second Edition. Pp. 452, with 134 illustrations. Cloth. Price $3.75. Philadelphia: Blakiston Company, 1951.

BOOK REVIEWS

Communicable Disease Nursing. By Theresa I. Lynch, R. N., Ed. D. Second Edition. Pp. 727, with 131 text illustrations and 4 color plates. Cloth. Price $4.75. St. Louis: C. V. Mosby Company, 1949.

This is a very complete and well prepared text on communicable disease nursing not only for nurses but also for medical students and physicians who wish to get acquainted with isolation aseptic technic at home and in the hospital.

The references and suggested reading given at the end of each chapter are excellent for those who wish additional material. Investigation and disease is discussed systematically in an outline form covering all phases. The discussion on community protection serves to emphasize the nurse's responsibility in public health protection.

Part V of this book, dealing with the home care of communicable diseases, is especially valuable information for nurses and physicians. The instruction of the patient and his family in the prevention and control of communicable diseases is thus well emphasized.

The section on poliomyelitis is not as comprehensive as it could be in view of the vast amount of new knowledge we have about this controversial malady. Many statements are inadequate and confusing for the nurse who attempts to handle the acutely ill polio patient. For example, it is stated on page 228 that "the average duration of the acute stage is, approximately, one week. The muscle tenderness may persist for a long time." Actually the acute stage depends on the extent of the paralysis and the type of treatment which is instituted. The paralysis may stop progressing in one week but the condition of the patient and the persistence of the muscle tenderness will depend entirely on the medical management and the nursing care.

Under complications, on page 230, it is stated that, "atrophy of the paralyzed parts and deformity are the usual sequelae." Atrophy is usual but deformity is not a sequel of the disease but a complication which could be avoided. Pneumonia and atelectasis should be avoided by modern therapy rather than be expected as complications. The discussion of the nursing care of the patient in the respirator is good.

As a whole, the entire chapter XVIII on poliomyelitis needs revision, and those interested in polio nursing care should refer to more recent literature.

The appendix section gives very valuable practical information on reporting requirements, unusual diseases, a tabulation of the communicable diseases in summary form, precaution technics for general hospitals, nursing procedure, and a useful glossary.

Twenty-third Anniversary Number of the Hebrew Medical Journal.

The appearance of Volume 2, 1950 of The Hebrew Medical Journal (Harofe Haivri), concludes the 23rd successful year of its publication under the editorship of Moses Einhorn, M. D. Written in Hebrew, with English summaries, the Journal is a contribution to the development of the Hebrew medical literature, and thus aids the newly established Hebrew University Medical School in Jerusalem.

In the medical section, among the articles of interest are "Surgical Treatment of the Painful, Stiff Hip — (The resection-angulation operation)" by Henry Milch, M. D., "Electroencephalography and the Epilepsies" by Samuel J. Lipnitzky, M. D., and an article by Dr. M. Temkin on the various infectious diseases which prevailed in Palestine, such as malaria, typhoid fever, pappataci and amoebiasis, and have lately been checked by the Health Department of the Government of Israel.

In the section "Old Hebrew Medical Manuscripts," Dr. Zussmann Muntner of Jerusalem presents a 12th Century manuscript on diarrhea, by Abu'l Walid Ibn Rosh (Averroes, the Philosopher). In the section "Personalia," are included biographical sketches on the well-known Dr. David Israel Macht, on the occasion of the fortieth anniversary of his scientific research, and also on the life and work of the late physicians, Dr. Harry Friedenwald, Dr. Abraham J. Rongy, and Dr. Nathan Ratnoff.

For further information, communicate with the editorial office of The Hebrew Medical Journal, 938 Park Avenue, New York 28, N. Y.

Trephine Technique of Bone Marrow Infusions and Tissue Biopsies. By Henry Turkel, M. D. Pp. 44. Cloth. Price, $1.00. Detroit, Mich.: Trephine Instruments Inc., 1950.

This is a very clearly illustrated booklet on the various techniques of doing bone marrow infusions, tissue and bone biopsies, by using special needles. A very useful booklet for pathology departments and residents. A complete bibliography is given.

Physicians Handbook, 6th Edition. By Marcus A. Krupp, M. D., Norman J. Sweet, M. D., Ernest Jawetz, M. D. and Charles D. Armstrong, M. D. Pp. 365. Price $2.50. Palo Alto, California, Univ. Medical Publishers, 1950.

This pocket size handbook is a ready source of medical factual data, laboratory procedures, and clinical aids generally used in everyday practice. A complete index makes it possible to locate any information desired. Because of the large amount of material crowded in this little book the type is small, but it is arranged in an easily followed outline form.

Cerebral Palsy. By John F. Pohl, M. D. Pp. 213. Price $5.00. St. Paul, Minn.: Bruce Publishing Company, 1950.

This is an excellent treatise in the management of cerebral palsy. The author justly points out that this is one of the most serious causes of crippling in children and yet generally the most neglected as far as systematic rehabilitation is concerned. Education, also, so important for these physically handicapped people, is not furnished at all by many communities.

The author outlines very plainly the types of cerebral palsy and goes into detail in the treatment by physiotherapy. Although he mentions such drugs as myanesin, prostigmin and curare, their value is minimized. Others have shown, however, that these drugs can be very valuable adjuncts to physiotherapy, when properly employed.

Perhaps the author's best contribution in the management of cerebral palsy is the detailed description of the application of neuromuscular training to; (1) Establish muscle consciousness; (2) Secure muscle function; and (3) Insure coordination. Photographs illustrate the methods used in the re-education of all of the muscles of the body. The techniques used are easily recognized as those used by the author in his book of the Kenny Concept of Infantile Paralysis. The method has merits, but it is painstaking, time consuming, and requires well-trained physiotherapists.

This is a very complete book for physiotherapists and physicians interested in the management of cerebral palsy.

Marihuana in Latin America — The Threat It Constitutes. By Pablo O. Wolff, M. D. Pp. 53. Paper. Price $1.50. Washington, D. C.: Linacre Press, Inc., 1949.

This booklet tells the complete story of marihuana. The botanical characteristics and the uses of this dangerous drug are described as they occur in the various countries of the world. The effects of the drug on the mentality of the individual and the tendency of the victim to perform certain vices and crimes are well described. Cheapness and its extensive use by the poorer, less educated peoples, are also described. Its extensive addiction in Mexico (from where most of the drug is distributed to other countries), Cuba, and the United States, is well emphasized. The spread of marihuana addiction to children and adolescents is a serious problem which authorities are engaged in solving at the present time.

This is a very useful booklet for school and police authorities who should be informed of the early mental changes brought about by addiction to this drug. A complete bibliography is given.

The Physician Examines the Bible. By C. Raimer Smith, M. D. Pp. 394. Cloth. Price $4.25. New York: Philosophical Library, 1950.

This unusual book is most interesting, especially to medical men. The erudite author, who apparently is fully at home in the Greek and Hebrew languages, clarifies many passages of the Bible that only a physician could, but his main effort is the discussion of the medical subjects of the Bible. This he does most satisfactorily, and we could take issue with him at only a few points. One of the best sections is that on the correlation of science and the Bible, an area that Bryan and all the later fundamentalists seem never to be able to comprehend. There is no dogma or sectarian theology in the book. The book concludes with a concordance of 31 pages.

This book should be of interest to clergymen, Bible school teachers and mature students, to physicians and medical students, and to those students of history who are especially interested in the Biblical eras.

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 2

FEBRUARY, 1951

Per Copy, 50c
Per Year, $4.00

ACHALASIA TREATED BY TRANS-ABDOMINAL ESOPHAGOGASTROSTOMY

A Case Report

Harold S. Rafal, M.D.,*
and
J. Jesse Selinkoff, M.D.,
Wilmington, Del.

In 1679 Thomas Willis wrote a most concise description of a case of Achalasia which is classic. The manner of treatment that he described is, with several refinements, still in common use today, namely: bouginage. A complete discussion of all the aspects of this disease is beyond the scope of this paper. However, a brief summary of incidence, symptomatology, etiology, diagnostic methods, and treatment will be given.

Incidence

Carcinoma is probably the only cause of dysphagia which is more common than Achalasia.

Etiology

Several ingenious theories have been advanced to explain the disease, but since none of these have been proven, repetition here seems unwarranted.

Symptoms

The most frequent triad of symptoms is pain, dysphagia, and regurgitation of food. Pain is present in 60 to 70% of cases in contrast to the usual absence of pain in carcinoma of the esophagus. Cold foods, such as ice cream, usually will precipitate pain more readily than warm foods. Pain is not necessarily confined to periods of ingestion of food. Usually substernal in location, it may radiate to the neck, angle of the jaw or mastoid area.

Vomiting may occur either immediately after eating, at night, or even days later. Since it arises from the lower esophagus, it is very rarely projectile in type. In milder cases vomiting may be avoided by eating slowly while in the erect position and drinking warm fluids with the meal. Patients frequently relate that there is regurgitated food on their pillows upon arising in the morning, the vomitus having flowed out while they were in the recumbent position during the night.

Occasionally, as in the case herein reported, respiratory symptoms predominate, being manifest as dyspnea or a sensation of "cutting off my breath." Presumably this is due to a reflex arising from the esophagus itself or from the periesophageal tissues as a result of pressure from the dilated esophagus. Exacerbations may occur during periods of emotional stress but a psychosomatic factor is not always demonstrable.

In some instances cardiospasm has been reported as secondary to gall bladder disease, esophagitis, "peptic" ulcer, diaphragmatic hernia and foreign body within the esophagus.

Weight loss is very common and might reach a state of cachexia.

Roentgenology

X-ray studies will usually show a smooth, olive-tip type of obstruction at the cardia, with or without dilatation of the proximal esophagus. The esophagus must be cleansed of retained food and secretions before the examination because the accumulated debris may obscure roentgenologic findings.

Esophagoscopy

May show considerable esophagitis secondary to food retention. In practice many degrees of achalasia are seen. It can frequently be produced in normal subjects by drinking ice water while in a greatly over-heated and exhausted state induced by violent exercise. Some patients may have symptoms only in the morning or when emotionally disturbed. Others lose weight, or, as in this case, having lost weight, remain in a condition of chronic malnutrition. Another group have marked dysphagia, pain and a sensation of suffocation. The group with vomiting should be considered to have reached a more advanced stage of the disease.

---

*Member of Staff, Wilmington General Hospital.

Treatment

Medical therapy consists, in essence, of advice to chew slowly and thoroughly, rest before and after meals, use of warm foods and medication.

The use of drugs has been based upon attempts to stimulate or inhibit the sympathetic or parasympathetic nervous systems. Experimentally, morphine and amyl nitrite produce temporary relaxation in humans. Benzedrine produced relaxation for one hour followed by severe spasm for two hours. Insulin-induced hypoglycemia brought about relaxation only during the period of hypoglycemia. Epinephrine, sodium nitrite, mecholin and metrazol showed no definite benefit. Subcutaneous and intravenous atropine gave inconsistent results, no benefit being obtained in some cases which were carried to the point of atropine poisoning (Vincent). Douthwaite found that amyl nitrite produced a very short period of relaxation, frequent inhalations over a period of several months apparently diminishing the strength of the obstructive mechanism.

With failure of these conservative measures peroral dilatation is in order and is frequently successful though often requiring repetition at regular intervals. This is, of course, uncomfortable and not without danger, perforation of the esophagus having occurred during the procedure with sufficient frequency to be statistically significant. However, in many instances this form of therapy is highly effective.

Indications for Surgical Intervention

Scheibel [1] lists the following four indications: (1) when x-ray reveals a flask or sigmoid shaped contour of the esophagus. In these cases dilatation is difficult, dangerous and usually must be repeated more or less continuously; (2) when under an adequate regime, the patient requires dilatation very frequently, such as once a week or several times each month. He or she should then be advised that operation carries a high percentage of cure with a low mortality rate; (3) when the patient does not tolerate dilatation well because of pain or fear and there is no possibility that he will learn the use of bougies without medical aid; (4) when the patient is geographically or financially unable to have frequent dilatations.

Choice of Operation

Attempts to remedy the disease by surgical attack on the autonomic nervous system have been disappointing. Modern surgery is directed toward altering the esophago-cardiac junction itself.

An excellent review of the various procedures used and their evaluation as well as a comprehensive discussion of the disease entity itself has been made by Ochsner and De Bakey.[2]

Briefly the three most popular procedures used today are (1) lateral esophagogastrostomy, which is the Finney pyloroplasty principle applied to the proximal end of the stomach; (2) vertical incision of the lower esophagus and upper stomach repaired by lateral closure; and (3) extramucous esophagocardiomyotomy, which is similar to the Remstedt operation in principle.

Any of these may be done through a thoracic or abdominal approach. Apparently most operators in this country prefer the thoracic approach, and in our opinion, the exposure afforded and the attendant ease of operation through this avenue establishes it as the incision of choice in most cases.

All three types of plastic procedure have given excellent results though the impression gained from the literature is that the Finney type of procedure is the choice of most of the surgeons in this country.

Case Report

H. H. White female, aged 48.

This patient presented herself to one of us (J.J.S.) on September 7, 1949 complaining of bouts of vomiting and pressure in the chest. She stated "When I eat, it puts me out of breath." Her illness dated back 12 years, apparently starting with nausea and vomiting of pregnancy. She developed a vomiting syndrome at the onset of the disease. Fruit seemed to be the greatest offender and she noted that she vomited with ease after eating. Eight years prior to her first visit she noticed a feeling of pressure in the chest after eating which became progressively worse. Within the last year she had been forced to induce vomiting in order to obtain relief from the substernal pressure and marked difficulty in breathing produced by ingestion of food. There was no difference noted between the ingestion of soft or liquid foods, nor did she note any difference between warm and cold foods. Even water caused symptoms. She stated that she seemed to digest her food and "take" it better while she was standing. Although she never weighed over 105 lbs., her weight was about 85 lbs. at the time of initial examination. She believed that the weight had been lost predominantly in the last year and the greater portion in the last 3 or 4 months.

She stated that for the first 11 years of her illness vomiting was practically a daily occurrence and usually came about an hour after eating. She had never noted any regurgitated food on her pillow upon arising in the morning. She claimed that, as a rule, there was no true pain associated with her condition. For a month prior to examination she noticed a slight streaking of blood in her vomitus. The vomitus occasionally contained food ingested the day before. There was a cough aggravated by stooping and a mild afternoon rise in temperature to about 99.5° F.

System Review. The patient stated that she did not cough very much except when she bent over. She caught cold easily. She did not have chills nor did she notice any foul sputum. She wasn't dysneic and did a full day's chores around the house without undue difficulty.

Her bowels moved about every other day, as a rule. She never noted blood, mucous or tarry stools.

Catemenia 13 x 34 x 4; mild cramps; grava viii; para vii. One child died at the age of 1 year. Her last normal period was in December, 1948, with no bleeding since then.

Urinary history was negative. No evidence of cardiac decompensation or edema. Precordial pain only after eating. No dyspnea or angina on exertion.

There were no other serious illnesses or operations.

Her mother was alive at the age of 86. Her father died at 59 due to some type of "stomach trouble." All of her siblings were living and well except for one who had been a war casualty. The only relevent history was that one nephew had tuberculosis upon returning from service and resided next door and was a frequent visitor.

Physical Examination. A well developed, very thin, white female appearing somewhat older than her stated age. The color of the mucous membranes and conjunctivae was good. There was no evidence of avitaminosis upon examination of the buccal cavity. She had a brassy type of cough usually associated with some types of recurrent nerve pareses.

Head and Neck. No cervical adenopathy. There was a small, solid tumor about 2.5 cm. in diameter on the right lobe of the thyroid in the upper pole. This was presumably an adenoma of the thyroid which did not extend into the mediastinum. Since bronchoscopy was to follow, no direct or indirect laryngoscopy was done at the time of examination.

Chest. There were crepitant rales throughout the entire left lung field which persisted after cough. The heart showed no apparent abnormality.

Abdomen. Entirely free of pathology on physical examination.

Pelvis. Severely lacerated cervix with a fairly marked cervicitis and a moderate amount of white discharge. The uterus was retroverted. The adenexae were negative.

Roentgenology. A gastro-intestinal series done on September 13, 1949 was given the following report by Dr. S. Thomas Miller: "Fluoroscopically the heart and mediastinum are seen to be retracted to the left side. The capacity of the left-sided thorax is considerably diminished. Films of the chest were made and show this retraction of the heart and mediastinum and a marked reduction in the lung capacity of the left side. There is a compensatory emphysema of the right lung. The right lung field is normal. On the left side there are numerous small, thin-walled cavities which have more the appearance of cysts than cavities. There is a suggestion of a fluid level in several of the lower cystic cavities on this side. There is some thickening of the apical pleura on the left side and also to some degree on the right. While the possibility of tuberculosis cannot be entirely excluded and should be checked by sputum examinations, we do not feel that the pathology in the left lung is on the basis of tuberculosis. It is more likely a marked fibrosis and cystic changes of the left lung, possibly with bronchiectasis, on the basis of the esophageal lesion which is described below.

"The esophagus is also retracted towards the left side. It is markedly dilated and contains a large amount of non-opaque and semi-opaque material. The small amount of barium filled the esophagus almost to the pharynx where a fluid level could be seen. The lower end of the esophagus is well below the diaphragm and ends in a conical-funnel configuration. The outline of the lower end of the esophagus is entirely smooth and shows no irregularity or defect which is any way suggestive of a malignancy. The barium trickled through the funnel end of this esophagus very slowly and at times a marked spasm is seen. Only a small amount of barium entered the stomach but enough of this was present to outline the stomach and duodenum. These structures were found to be entirely normal. A pearl of amyl nitrite was broken and the patient inhaled the drug. We were definitely able to see some relaxation of the spasm of the lower end of the esophagus with more emptying of the esophagus into the stomach. It is of interest to note that the patient felt considerably better within a few minutes after smelling the amyl nitrite.

Comment: We have a typical case of cardiospasm or preventriculosis. This is sometimes referred to as achalasia. It is not malignant. It is of failure of relaxation of the cardiac sphincter. The changes in the lungs have been described as occurring rather frequently and are due to aspiration of the contents of the esophagus with subsequent pneumonitis, fibrosis, bronchiectasis, etc. . ."

An esophagoscopy was performed on November 16, 1949 by Dr. William Hazzard and reported as follows: "Esophagus tremendously enlarged. The mucosa was superficially ulcerated. The esophagus held about 1000 c.c. of fluid. It was impossible to locate the cardia."

Bronchoscopic examination was essentially negative.

A culture of the sputum was made and the bacteria found were sensitive to penicillin. Penicillin aerosol inhalation therapy was instituted. One hundred thousand units of penicillin-G in 1 c.c. of glycerinized saline was insufflated daily. After the first week of therapy the patient was able to bend over without incurring the previous type of paroxysmal, productive cough. At the conclusion of the series of 12 daily inhalations no cough was evident and the rales in the left chest had diminished to the vanishing point, being brought out by cough only. The patient was breathing without effort and no longer had any afternoon rise in temperature. Bronchoscopy performed on November 15, 1949 showed an essentially normal tracheo-bronchial tract, as noted above, in accord with the clinical picture. At the same time the patient was instructed to inhale a pearl of amyl nitrite as soon as she had ended her meals. This treatment apparently relieved her condition considerably.

Laboratory Findings. On admission to the Wilmington General Hospital on November 30, 1949 the following were found: R.B.C. 3,900,000; W.B.C. 6,800; hemoglobin 12 Gm.; eosinophiles 2; stabs 2; segmenters 76; lymphocytes 17; monocytes 3. Urine: acid: pH 4.5; specific gravity 1.026; albumen 2 plus; sugar 0; W.B.C., occasional; epithelial cells, many. Prothrombin time 100%; hematocrit 43%; serum protein 8.2 Gms.; albumen 4.4; globulin 3.8; A/G Ratio 1.1:1.

Operation. On December 7, 1949 operation was performed under endotracheal N2O2 plus O2 supplemented with intravenous sodium pentothol. Despite the preference for the thoracic approach, the marked changes in the left lung field and mediastinal shift toward the left influenced the choice of the infra-diaphragmatic incision.

Findings. Pertinent findings were confined to the distal esophagus, where, for a distance of about 8 cm., there was constriction and marked edema, induration and thickening of the musculature, imparting a "rubber-hose" type of consistency to the organ in this region. No tumor was found when the esophagus was opened during performance of the anastomosis.

Technic. A left rectus splitting incision was made and continued up over the left costal cartilage. The latter was divided to facilitate exposure. The left coronary ligament of the liver was incised and the left lobe of the liver retracted to the right, exposing the abdominal esophagus. The peritoneum was incised at the junction of the under surface of the diaphragm and esophagus and this incision was carried laterally for several cms. on either side. The distal thoracic esophagus was mobilized from the inferior mediastinum. This was facilitated by division of part of the gastro-hepatic ligament, the right vagus nerve, and placement of a long Deaver retractor through the esophageal hiatus of the diaphragm.

The esophagus was drawn down into the abdomen and a Finney type of esophagogastrostomy was performed.

A U-shaped incision was made through the distal 10 cms. of the esophagus, carried up onto the cardia, after having placed a row of Halstead mattress sutures of #000 black silk between the distal esophagus and the cardia of the stomach. Continuous posterior mucosal suture was then placed. Before completion of the mucosal suture anteriorly as a Connell suture, a through and through suture of #00 black silk was taken through the posterior flap created by the anastomosis and the posterior wall of the stomach. A purse string suture was taken on the posterior gastric wall to prevent leakage from this suture. The object of this maneuver was to prevent a valve-like action being set up by this posterior flap and perpetuating obstructive symptoms.

The anterior mucosal suture was then finished and the anastomosis completed with the placement of the anterior serosal suture line of #000 black silk Halstead mattress sutures.

A drain was placed near the anastomosis and brought out through a stab-wound under the left costal margin. The abdomen was closed in layers. Three silkworm gut stay sutures were placed.

Postoperative Course. The patient made an uneventful recovery from the operation, being allowed out of bed the second day. The wound healed by primary intention. A repeat x-ray was taken on December 16, 1949 which was reported as follows: "Fluoroscopic and radiographic examination of the esophagus post-operatively shows a considerable reduction in the width of the esophagus and some smoothening of the contour which previously showed a considerable amount of tertiary contraction. At this time the barium appears to enter the stomach more freely but it still does so in a rather spasmodic fashion and does not drop into the stomach by gravity. The passage of the barium through the esophagus is certainly a lot better than it was preoperatively. There is demonstrated a persistent ulcer crater above, or at the region of the anastomosis. We believe this to be a traumatic ulcer with probably a considerable amount of associated edema which is in some degree responsible for the spasmodic obstruction in this area. Re-examination in 3-4 weeks is suggested."

The patient returned to her home in western Pennsylvania with instructions to remain on a modified Sippy type of diet, with the use of antacids. She returned in one month claiming that she felt immeasurably better, was able to eat almost everything, but that she had mild heart-burn at times which was alleviated by the use of the antacids prescribed. Her weight increased to 114 lbs. from a preoperative level of 84 lbs. and she felt "like a new girl." This status was unchanged one year later.

Comment

1. Though there has been dramatic benefit to the patient clinically, the x-ray findings were far less gratifying. This has been repeatedly reported.[3]

2. A mild ulcer-like syndrome has been present. This has been noted in other cases observed. It is readily controlled in this case.

3. Despite repeated urgings to have the solitary thyroid adenoma removed, the patient only recently has consented to consider that operation.

4. Economic factors and distance have prevented more thorough x-ray and clinical follow-up of her pulmonary and esophageal status.

1100 N. Jackson Street.

REFERENCES

1. Scheibel, H. Max; Surgery; Oct. 1946.
2. Ochsner, A. and DeBakey, M.; Archives of Surgery, Nov. 1940.
3. Maingot, R.; Abdominal Operations, 1948.

ESOPHAGOCARDIOMYOTOMY FOR INTRACTABLE ACHALASIA

Herbert R. Hawthorne, M. D.,*
and
H. Clinton Davis, M. D.,**
Philadelphia, Pa.

Approximately ninety per cent of patients with achalasia respond to conservative treatment consisting of dilatation of the cardioesophageal junction, esophageal rest, and psychotherapy. Belladonna and atropine are rarely helpful. Because of intractability, the remaining ten per cent of these cases come to surgery.

Most of the surgical procedures were devised in an attempt to enlarge the cardioesophageal opening. In 1900 Mikulicz performed manual and instrumental dilation of the cardia via a gastrotomy. Later he accomplished a similar effect by invaginating the anterior gastric wall through the cardiac sphincter with a special instrument. Employing the Fredet-Rammstedt technique, Heller successfully treated achalasia with both an anterior and posterior esophagocardiomyotomy. The Heineke-Mikulicz pyloroplasty was adapted for cardioplasty by Wendel in 1910 and Myer in 1913. Two years later this operation was modified by Girard who advocated a longitudinal incision with transverse closure, leaving the mucosa intact. Simple esophagogastrostomy as proposed by Heyrovsky, left a troublesome spur at the cardioesophageal junction until Grondahl and Womak modified this procedure after the method of Finney. In 1944, Garin modified the Heller operation by performing just the anterior esophagocardiomyotomy.

Technique

Preoperatively, the esophagus should be studied thoroughly by barium contrast X-ray technique, and by esophagoscopic examination in order to eliminate the possibility of other local organic disease. Megacolon and megaureter may also coexist. Esophagitis can be improved by daily lavage. A Levine tube is passed into the stomach shortly before surgery and it is left in place until the first or second postoperative day.

The abdomen may be opened with a high left rectus or paramedian incision. By means of downward traction on the stomach and upward traction on the right and left costal margins, it is possible to expose and divide the left triangular ligament of the liver. With the liver retracted to the right of the field, the peritoneal reflexion around the hiatus is divided and the lower esophagus mobilized. The latter is facilitated by placing a soft rubber catheter about the cardioesophageal junction for gentle downward traction and in this way about three inches of the lower esophagus may be delivered into the abdomen.

The incision is started over the lower end of the esophagus and is extended two and a half inches cephalad to a point slightly above the area of esophageal dilatation. The longitudinal incision is then carried downward across the cardioesophageal junction for a distance of one and one-half inches on the anterior gastric wall. A most careful dissection is required down to the mucosa beneath the thin gastric wall. Small vessels superficial to the mucosa may require division in order to allow proper spreading of the layers and a consequent bulging of the mucosa. If the mucosa is injured, the rent can be repaired with fine silk or cotton interrupted sutures.

Postoperatively, oral fluids may be taken the first day, semi-solid foods by the third or fourth day. A regular diet can be ordered after the first week.

Case 1 T. B., a 52-year-old white housewife, was admitted with complaints of difficulty with swallowing, regurgitation and a ten pound weight loss. Symptoms dated back three years to an argument wtih her sister, toward whom she is still cool. On four previous admissions she had been treated by esophageal dilatation. During the six months prior to this admission she noted steady progression of her symptoms to the point where she could no longer retain any semi-solid food and scarcely any liquid. Physical examination was essentially negative except for obesity and marked dehydration. Laboratory studies were normal. The urine specific gravity of 1.032 reflected the dehydration.

---

*Professor of Surgery, Graduate School of Medicine, University of Pennsylvania.

**Senior Resident in Surgery, Graduate Hospital.
From the Department of Surgery, Graduate Hospital, University of Pennsylvania, Philadelphia.

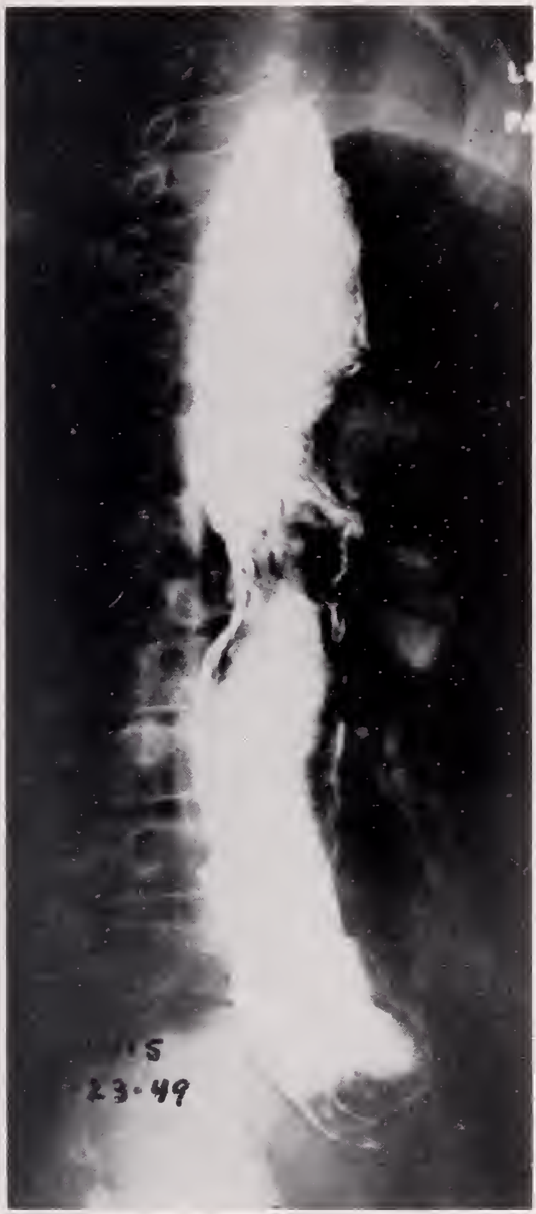


Fig. 1. — Case 3. — Intractable achalasia of long duration.

After several days of preparation with parenteral fluids and esophageal lavage, a four inch anterior esophagocardiomyotomy was performed. Because three large gall stones were discovered, a cholecystostomy was also done. Oral fluids were started on the second postoperative day, semi-solids on the third day. A follow up barium study showed good emptying and she was discharged on the sixteenth day, completely asymptomatic.

Case 2 H. DeW., a 22-year-old, unmarried, white female, was admitted with a chief complaint of "food doesn't go down." Besides dysphagia, she also complained of substernal burning pain and regurgitation. The onset of these symptoms was correlated with a telegram from the War Department three or four years before admission, containing notice of her brother's death. Forty-two pounds of weight were lost during the first few months. With each additional government communication the symptoms were aggravated. Two previous periods of hospitalization had been necessary. Physical examination and laboratory studies were normal.

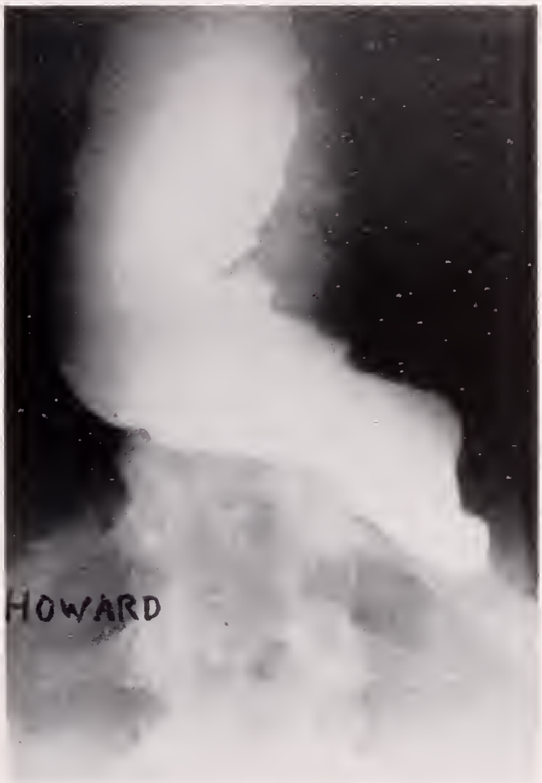


Fig. 2.—Case 7.—Achalasia of the esophagus, sigmoid type. Note the complete obstruction at the cardioesophageal junction.

Through a high midline incision the cardia and lower esophagus were mobilized and a 9.5 centimeter anterior esophagocardiomyotomy was performed. All symptoms disappeared after surgery except occasional pyrosis in the immediate postoperative period. Solid foods were satisfactorily ingested before she was discharged on the fourteenth day. Three months later, a barium study showed immediate emptying of the esophagus with almost complete return to normal of the previous esophageal dilatation.

Case 3. A. D., a 58-year-old colored male, was admitted with complaints of difficulty with swallowing, shortness of breath, a twelve pound weight loss, bloody vomiting and pain after meals. Twenty-five years before this admission, he had been treated medically for a peptic ulcer. Eight years previously he had been x-rayed for the cause of hematemesis and a severe degree of achalasia was discovered. Conservative treatment, including dilatations of the cardioesophageal junction had failed. Physical examination revealed slight hypertension and slight pitting edema of the ankles. The serological and other laboratory studies were normal.

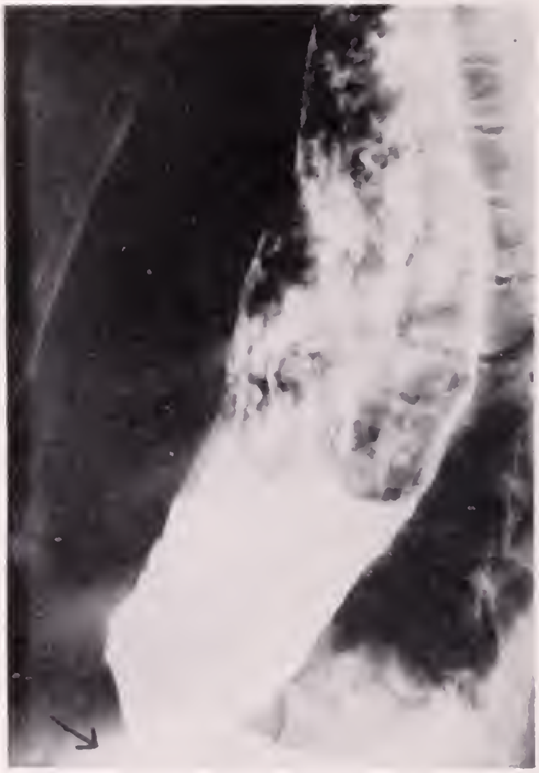


Fig. 3.—Case 6.—Chronic, intractable achalasia with marked esophagitis.

Following preparation of the esophagus with lavage an anterior three and one-half inch esophagocardiomyotomy was performed. While dividing the thin, adherent, circular muscle fibers, a small puncture occurred in the mucosa; however, this was easily closed with a cotton mattress suture. Because of this injury a Penrose drain was inserted into the hiatal area and oral fluids were withheld until the fourth postoperative day. Solid foods were tolerated nicely by the time he was discharged on the sixteenth day.

Case 4. A. R., a 42-year-old white male, was admitted with chief complaints of difficulty with swallowing, and regurgitation. Eight years previously he had started a series of dilatations at another hospital, but these were stopped abruptly when the cardioesophageal junction was perforated during instrumentation. Operative closure was necessary at that time. Dysphagia and regurgitation continued. Seven pounds had been lost in the twelve months prior to this admission. Physically the patient presented no serious abnormality except for a depressed mental state. Laboratory studies were normal.

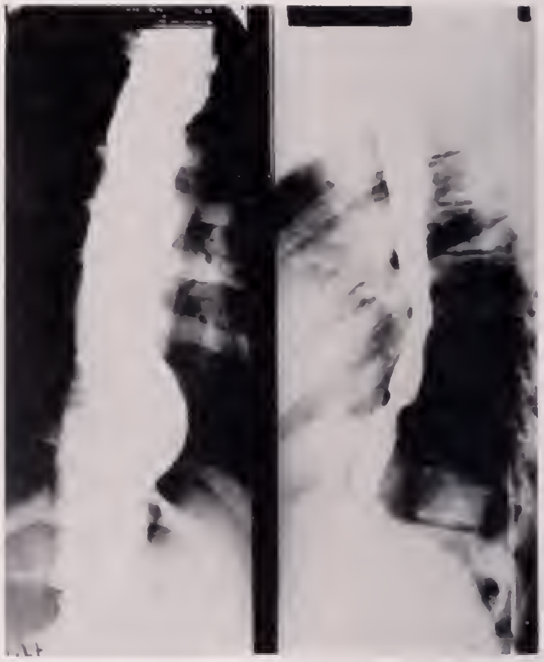


Fig. 4. — Case 2. — Pre-operative and postaperotive films showing dramatic reduction in the size of the esophagus after three months of surgical relief.

At operation a transthoracic approach was selected because of the former lower esophageal perforation. The many dense adhesions encountered posteriorly and medially to the liver, would have made the abdominal approach most difficult. A four inch esophagocardiomyotomy was accomplished. The chest was closed without drainage. Oral fluids were offered on the second day and a regular house diet on the eighth day. By the date of discharge, fifteenth day, he complained only of slight incisional pain.

Case 5 B. B., a 28 year old white housewife, was first admitted when she was five months pregnant and unable to pass liquids into her stomach. Despite esophageal rest followed by bougie dilatation, the condition failed to improve. An obstetrical consultant suggested that an esophageal plastic operation at that time would carry greater risk to the baby than a simple gastrostomy; therefore, the latter was performed and the patient went on to deliver a normal infant at term. Her symptoms of difficulty with swallowing and regurgitation persisted. Occasionally she complained of substernal pain after meals. With a seven year history of intractable achalasia, dating back to her first pregnancy, a decision was made to have definitive surgical intervention.

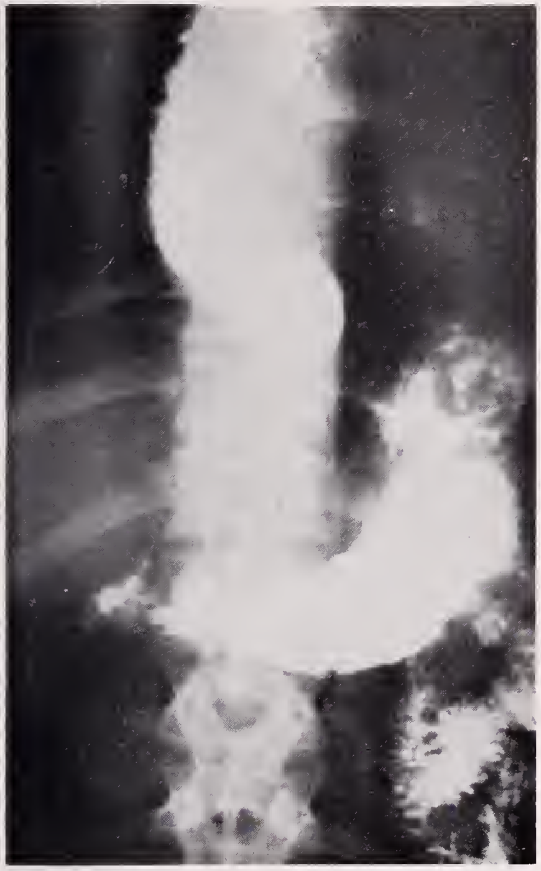


Fig. 5.—Case 4.—Intractable achalasia. Note the assessary packet at the cardioesophageal junction due to perforation with an esophageal dilator.

Again the modified Heller operation was selected and performed with an excellent result. However, her postoperative course was complicated by a deep wound infection, the result of soilage from the previous gastrostomy near the Penrose hiatal drain. She was discharged on the twentieth day eating a full diet.

Case 6 L. B., a 46-year-old colored male, was admitted to the Hospital with a ten year history of regurgitation and difficulty with swallowing, particularly the solid foods. Pyrosis had been present for three to four years. During the decade of symptoms, twenty-five pounds of weight had been lost. Physical examination revealed marked hypertrophy of the parotid glands which, according to the patient, had started with the onset of symptoms ten years before. Moderate hypertension and an occasional extra systole were additional findings.

A four inch long anterior esophagocardiomyotomy was easily performed through the transabdominal route. Despite no injury to the mucosa, a Penrose drain was placed in the hiatal area to drain any hematoma or serum collection. Oral fluids were given on the second day, semi-solid foods on the fifth day and solid food on the ninth day. He was discharged from the hospital on the tenth day with complete relief of symptoms, and to the surprise of everyone the parotid hypertrophy was less marked.

Case 7 E. H., a 29-year-old male, was admitted with complaints of difficulty with swallowing, heaviness in the chest and pain following meals of fifteen years duration. Regurgitation was not present. In 1938 a series of bougie dilatations had been started, however, they were voluntarily discontinued because no benefit had been obtained. Although the patient lost no weight, x-ray studies showed a dilated, tortuous esophagus with complete obstruction to barium. See figure 2. Physical examination was negative.

Following esophagocardiomyotomy the patient was started on oral fluids the first postoperative day and was eating solid food satisfactorily by the eighth day when he was discharged. A Levine tube was not used in this case.

Discussion

Dilatations at repeated intervals will relieve many of the patients as evidenced by the remarkable results obtained by Dr. Gabriel Tucker, Chief of the Department of Bronchoesophagology in our Hospital. However, in other cases the condition may progress to produce serious organic disease. With surgery one can expect symptomatic relief with some diminution in the size of the esophagus. The degree of diminution varies and longer periods of time will be required to ascertain if the decrease in size of the enormous dilatation will continue.

Several points in technique should be stressed. Adequate exposure and mobilization of the lower two to three inches of the esophagus is paramount since the incision must extend from the stomach across the cardiac sphincter and somewhat beyond the point of beginning esophageal dilatation, care being taken to avoid injury to the vagus nerves. An incision less than four inches in length may be unsuccessful. The thin adherent circular muscle fibers must be completely divided before the mucosa can adequately bulge through. A Penrose drain should be placed adjacent to the esophageal hiatus if the mucosa is injured during the procedure.

Adequate mobilization of the lower esophagus is technically possible in most cases by using the high paramedian or left rectus muscle-splitting incision. The transthoracic route, as advocated by Graham, gives a better exposure; however, a higher morbidity is expected. Case 4 was operated upon through the bed of the eighth rib because of the previous esophageal perforation causing troublesome adhesions about the cardia.

Maingot reports cures in 38 of 39 cases. One operative death in his series occurred in a feeble 75-year-old patient. Excellent functional results were obtained in our seven patients treated by this technique, so that we now prefer esophagocardiomyotomy to esophagogastrostomy in the surgical management of achalasia.

Summary

1 The history of surgery at the cardioesophageal junction for achalasia is briefly reviewed.
2 The technique of esophagocardiomyotomy is discussed.
3 Seven cases of intractable achalasia treated by this operation are presented.
4 From this experience, esophagocardiomyotomy is preferred to esophagogastrostomy in the surgical management of achalasia.

250 S. 18th.

BIBLIOGRAPHY

Maingot, R: The Surgical Treatment of Cardiospasm, Postgrad. Med. 5:351-360, May. 1949.

Grimson, K. S:, Reves, R. J., Trent, J. C., Wilson, A. C.: Treatment of Patients with Achalasia by Esophagogastrostomy, Surgery, 20: 1946.

Graham, E: 1949 Year Book of General Surgery. Chicago: Year Book Publishers, pp. 253-255.

Garin, H: Modified Heller Operation for Cardiospasm, S. Afric. Med. J., 18:382-383, Nov. 25, 1944.

Bockus, H: Gastro-enterology, Philadelphia W. B. Saunders Company. Volume 1, 1946.

Grove, L., McMillan, E. C: Surgical Treatment of Achalasia of the Esophagus, J. M. A. Georgia, 35:155-159, June, 1946.

Bell: Treatment of Achalasia by Esophagogastrostomy. Surgery, 20: 1946.

THE EFFECTS OF 17-KETOSTEROID DEFICIENCY AND MALE HORMONE THERAPY IN RHEUMATIC FEVER AND ARTHRITIS

Charles William Dunn, M. D.,*
Philadelphia, Pa.

In 1940, our first report on the role of endocrine deficiency and the value of endocrine therapy in arthritis was published[1].

The endocrine preparations advocated in the treatment of arthritis were polyansyn (Armour) in 1-2cc dosage daily or 3 times a week; (polyansyn was a preparation containing the trophic fractions of Collip, ACTH; gonadotropic, thyrotropic, somatotropic or growth in quantities estimated to be of normal percentage in the anterior lobe of the pituitary gland. Clinical trials with polyansyn in Simmond's disease had shown it contained good ACTH activity); oral administration of anterior pituitary extract in 2-3 grains daily; progynon B in from 6,000 R. U. to 30,000 R. U. dosage; and thyroid extract, the dosage based on the degree of clinical hypothyroidism.

During the past decade the annual reviews of rheumatic fever and arthritis prepared by Hench and his co-authors have disregarded or disputed any role of the endocrine as a factor in this field. Despite this opinion, the late Dr. Ralph Pemberton and the author continued our endocrine therapeutic programme in the treatment of arthritis and in 1944 we started a series of complete hormonal assays of 24 hour specimens of the urine of arthritic patients in all age groups. Dr. Pemberton made the diagnosis of arthritis and the patients were from his private practice and his clinic at Abington Memorial Hospital, Abington, Penna.

---

*Associate Professor of Medicine, Graduate School of Medicine, University of Pennsylvania; Consulting Endocrinologist, Delaware State Hospital, Farnhurst, and Governor Bacon Health Center, Delaware City.

In 1948 Dr. Pemberton included a report of the assay findings for 17-ketosteroids, anterior pituitary gonadotropic factor and estrogens in a group of 47 arthritic patients and our conclusions in his address given at the University of Montreal on the day he received an honorary degree from that University for his research work in the field of arthritis and rheumatic fever.

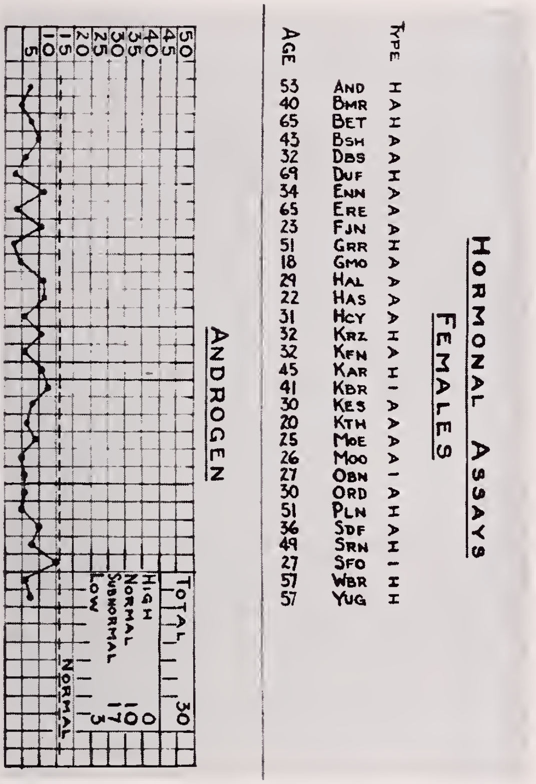


Fig. 1.—17-Ketasteroid excretion 24 hr. urine in 30 arthritic females.

Dr. Pemberton was to present the complete study at the International Congress on Rheumatism recently held in New York City but was unable to do so because of his indisposition and the author was unable to comply with his request to substitute for him.

The foregoing references are essential to our present report because of their confirmatory value as well as recognition of the late Dr. Pemberton's research in this field.

During the past eight months there have been admitted to the Governor Bacon Health Center, 17 convalescent (male) rheumatic children, from ages 6 to 14 years. All admissions receive an endocrine examination as part of their physical examination, otherwise the clinical importance of this group would not have been determined.

The population of this hospital center is largely children who are admitted for continuous and convalescent care, for family social problems and behavior problems. Thus the general childhood population affords ample clinical material for the demonstration of normal and subnormal development of the various ages and in family groups.

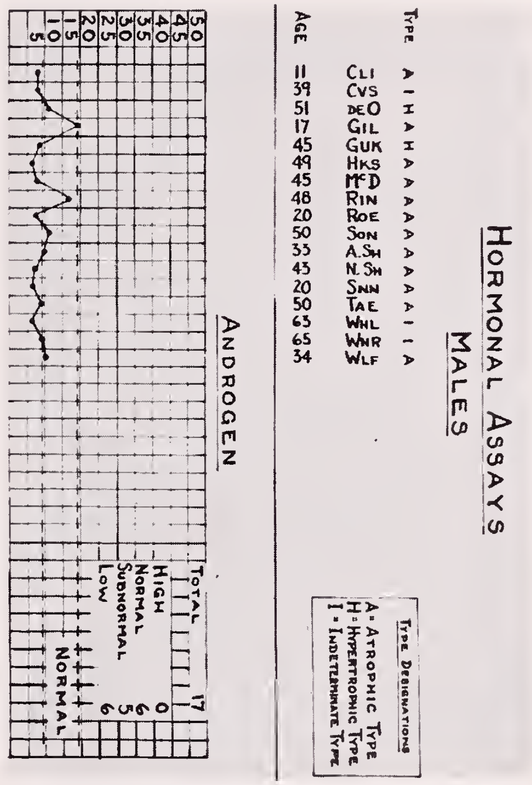


Fig. 2.—17-Ketasteroid excretion 24 hr. urine in 17 male arthritics.

The Governor Bacon Health Center has been in operation for a little over a year. In September, 1950 it occurred to us that in each instance that we examined a male child convalescing from rheumatic fever that marked underdevelopment of the testes was present. Since each examination was dictated at the time of examination, the genital examination of all rheumatic fever cases made by the author was available as part of the hospital

LIBRARY OF THE
EGE OF PHYSICIANS

record. The secretary was requested to supply me with this record for each male rheumatic child admitted to the Center.

The number of male convalescent rheumatic fever cases admitted up to November 15, 1950 was 17 patients. It was found that 76% of the group had genital underdevelopment and in each case it was only 50% of normal size. Each of these males showed the constitutional features of their hypogonadism. Thus we have established that in some manner a 17-ketosteroid deficiency is concerned in arthritis and rheumatic fever.

On November 13, 1950, J. L., age 12, developed rheumatic fever and was acutely ill with a fever of 104.2 F., and shortly thereafter acute inflammatory swelling began in both knees and ankles. He was examined by the author on November 15, 1950. His joints were acutely inflamed and a soft systolic murmur was present. Dr. L. Diamond has prepared a clinical summary of this patient:

J. L. was admitted to Governor Bacon Health Center on October 30, 1950, for treatment of a pathological emotional state. He was diagnosed as a primary behavior problem, personality disturbance, with impulsiveness, anxiety, nail biting, destructibility and fearfulness. Physical examination revealed an esthetically built, poorly nourished, white boy. Except for small, but cryptic and diseased tonsils, physical and neurological examination was essentially negative. On November 13th the child took ill with a temperature of 104.2 F, swelling and impairment of movement in the left knee joint. Sedimentation rate was 24 mm. per hr. and WBC 10,100 with 74% polys. Complete bedrest, salicylate treatment, and high vitamin C dosage was ordered. In addition, Dr. Dunn ordered treatment with oreton. The symptoms of acute swelling of knee and temperature disappeared after six days. At the present time his temperature is normal, sedimentation rate normal and he has only a faint systolic murmur at the apex.

The genital development of this patient was 50% of normal and in view of our previous findings in the 17 male rheumatic convalescents we decided to administer 12.5 mg. of oreton every other day for 6 doses as supplemental therapy to the regular anti-rheumatic therapy of salicylates, vitamin C in 200 mg. dosage, and antibiotics.

The response to therapy was dramatic and equalled that reported by Hench et al., with cortisone and ACTH. The therapy brought about normal temperature, fall in the sedimentation count and resolution of the joint pathology within 48 hours.

Shortly thereafter, L. D. age 12 years, who was examined by the author on November 15, 1950, and found to have marked genital underdevelopment developed rheumatic fever but in a milder form. He was given the same routine anti-rheumatic fever treatment as J. L. but no oreton. His rheumatic fever ran the usual prolonged course. Dr. L. Diamond has prepared a short clinical summary of this case:

L. D. was admitted to Governor Bacon Health Center on October 25, 1950, with diagnosis of primary behavior disorder and conduct disturbance. Physical examination revealed a well developed, well nourished white boy with retarded genital development; no signs of unusual chronic disease was noted. On December 8th the child developed rheumatic heart disease with swelling of the left knee joint, high temperature and elevation of sedimentation rate. He was treated with salicylates and high vitamin C dosage. In addition he received oreton as ordered by Dr. Dunn. His symptoms disappeared after two weeks. At the present time he is afebrile; sedimentation rates are normal and he is doing very well. There is only a faint systolic murmur at the apex. X-ray of the heart shows no enlargement and EKG is within normal limits. The child tolerates moderate exercises without any sign of exhaustion. He is ready to be transferred back to his cottage.

In a relatively short period of time two new admissions with severe gonadal underdevelopment contracted rheumatic fever. One case received specific endocrine therapy to correct his endocrine deficiency and it exhibited a dramatic abortive effect on the rheumatic arthritis; whereas the other patient receiving the same anti-rheumatic therapy as the oreton treated patient exhibited no unusual therapeutic response in spite of the mildness of his acute articular manifestations.

In view of the fact that the incidence of hypogonadal male children is higher in this Center than is usually observed and is probably related to the cause of admissions to the hospital, exclusive of the convalescent rheumatic patients, we are confronted with a practical problem of how much testosterone therapy should be administered to these hypogonadal male children to protect them from rheumatic fever.

It has been neither Dr. Pemberton's or the author's premise that an endocrine deficiency is an etiologic factor in arthritis or rheumatic fever. It has been our belief that the endocrine deficiency, such as the 17-ketosteroid deficiency established in our groups of cases, produces a subconstitutional environment which permits the unknown etiologic factor of rheumatic fever to invade the subconstitutional and subphysiological state which exist in the collagen tissue structures in the fibromuscular, articular, and para-articular structures. It is the low resistance factor of these collagen tissues to the toxic agent which permitted the pathologic responses of arthritis to develop.

We hold that for an endocrine therapy to be basically sound, an endocrine deficiency must exist and only by administering the specific endocrine hormone in deficiency can one expect therapeutic improvement and the proper constitutional or physiologic reparative response.

The therapeutic response of the rheumatic fever in case J. L. to oreton therapy was within the limits of expectations but was not anticipated in such a dramatic manner. We have seen other arthritic cases in their chronic form respond to male hormone therapy and have used it in one case for over 5 years until he reached age 17 years. Adult arthritics with subgenitalism have received male hormone for 6-8 years with excellent control, and improvement in their arthritis. We do not hold that endocrine therapy can repair pathologic damage which is destructive in nature but we do hold that the functional capacity in the damaged areas can be physiologically improved by control of the endocrine deficiency with proper endocrine therapy.

Anyone fully experienced with the condition of hypogonadism in the young male recognizes the fact that epiphyseal and articular structural growth is impaired and often to the ill-defined state of chondro-dystrophy or some such similar non-etiologic term. Thus it should not be surprising to find this relationship of 17-ketosteroid deficiency to rheumatic fever and arthritis. Clinical experience with endocrine therapy in the sexually immature male shows that male hormone therapy is effective in developing both genital and osseous growth and advancing epiphyseal growth to normal.

Up to the present time we have advanced the retarded states of osseous development and the subgenital development by male hormone orally administered; basing our dosage to evoke a slow but progressive genital response and using the constitutional and osseous response as a secondary guide to dosage of male hormone.

In view of our findings of 17-ketosteroid deficiency in young males being a factor in rheumatic fever and delegating this factor to the role of inducing subconstitutional and developmental state in the articular structures, which state renders the hypogonad more susceptible to rheumatic fever and arthritis, then we must change our therapeutic views on the necessity of early treatment of the sexual immature males and in fact use a more active stimulatory dosage of male hormone. This in many instances will produce erections of the penis which we have carefully avoided. These erections are not often due to the dosage of male hormone administered but to an abnormal sensitivity of the penis to erections.

In our judgment the choice is to protect these hypogonadal males from their susceptibility to rheumatic fever and arthritis. Accordingly, at the Center we are instituting a program of administering from 5-10 mg. of oreton M every other day to a group of 10 hypogonadal male children, and will use 10 other hypogonadal males as controls. The series will be enlarged, one male hormone treated case and one control, until we have sufficient clinical material to determine whether or not active male hormone therapy has a prophylactic value in hypogonads against rheumatic fever.

All young male rheumatic fever patients

will receive male hormone therapy as in case J. L., namely, 12.5 mg. of oreton, hypodermically, every other day for 6 doses, a total of 75 mg., to determine how frequently the results in J. L. can be duplicated.

We can not visualize any contradiction to using male hormone therapy in young females contracting rheumatic fever. The incidence of 17-ketosteroid deficiency in our adult female group of arthritics was 66% of 30 patients studied in this group.

There have been 5 convalescent rheumatic female children admitted to the Center. It is impossible to clinically evaluate a 17-ketosteroid deficiency in the female. These cases must have 17-ketosteroid urinary assays before any conclusions can be made, however, we can see no contraindication or permanent side effect which would ensue from the administration of a total of 50 mg. of oreton in 6 divided doses to case of acute rheumatic fever and arthritis in a female child.

The reports on the therapeutic value of cortisone and ACTH in rheumatic fever and rheumatoid arthritis reported by Hench et al.[2] and subsequently by others is an illustration of ketosteroid therapy beneficial effects in arthritis. The ketosteroids in this therapy are of adrenal-cortical origin and have the disadvantage of side effects and possible depletion of adrenal cortical function when ACTH is used for a prolonged period.

For the present we are most concerned in the role of male hormone therapy acting as a protective agent against rheumatic fever in young hypogonadal males. It is far more important to prevent a case of rheumatic fever than to arrest or cure it.

Conclusions

A group of 17 young male children convalescing from rheumatic fever and arthritis showed a 76% incidence of sexual immaturity of a severe degree. A group of 17 adult male arthritics showed an 88% incidence of low 17-ketosteroids in their 24 hour urinary excretion. A group of 30 adult female arthritics showed a 66% incidence of low 17-ketosteroids in their 24 hour urinary excretion.

Two sexually immature male children developed rheumatic fever and arthritis. Male hormone therapy was given to only one patient and he exhibited a dramatic recovery; the control patient did not receive male hormone therapy and his illness ran the usual course even though his rheumatic attack was much milder. Both cases received routine anti-rheumatic therapy, antibiotics, vitamin C and salicylates.

The weight of clinical and investigative evidence in our group of rheumatic fever and arthritic patients indicates a 17-ketosteroid deficiency of testicular origin in the group of 17 young and 17 adult males studied in this report.

We are of the tentative opinion that 17-ketosteroid deficiency predisposes the hypogonadal male to rheumatic fever and arthritis. This predisposition is the result of immaturity of development and subphysiological function of the collagen tissues in the articular and para-articular structures. 17-ketosteroid deficiency is not the etiological factor producing rheumatic fever and arthritis.

17-ketosteroid therapy in the form of a testosterone compound, such as testosterone propionate and methyl testosterone, are indicated both in the treatment of rheumatic fever and arthritis whenever a 17-ketosteroid deficiency is apparent and when the constitutional picture can be attributed to a 17-ketosteroid deficiency.

Hypogonadal male children should receive male hormone therapy at an earlier date than previously given and in more active dosage if, as the facts appear to indicate, a 17-ketosteroid deficiency predisposes him to rheumatic fever and arthritis.

We wish to thank Dr. Edward Henderson of the Schering Corporation for his courtesy in giving us the supplies of oreton for this work.

References

1. Dunn, C. W.: Present Status of Endocrine Therapy in Arthritis, Med. Clin., N. A. 24:1697-1708 (Nov) 1940.
2. Hench, P. S., Kendall, E. C., Slocum, C. H., and Polley, F. F.: The Effect of the Adrenal Cortical Hormone and Pituitary Adrenocorticotropic Hormone on Rheumatoid Arthritis; Proc. Staff Mayo Clinic, 24:181 (Apr. 23) 1949.

   The Effects of the Adrenal Cortical Hormone on the Acute Phase of Rheumatic Fever; ibid, 24:277-298 (May 25) 1949.

   Symposium on Cortisone and ACTH in Clinical Medicine, ibid, 24:474-479 (Aug. 16) 1950.

THE USE OF DIMETHYLYN IN THE MANAGEMENT OF CERTAIN SYMPTOMS OF MENOPAUSE.

George J. Boines, M.D.,*
Wilmington, Del.

The menopause or climacteric has been defined as that period at which the sexual processes in the female terminate. Menstruation ceases and certain retrogressive changes gradually take place in the accessory organs of reproduction.

The most pronounced symptoms of menopause are: amenorrhea, irritability, vasomotor disturbance, fatigue and depression. Depressive and anxiety tension states are frequently manifested. The most distressing neurovascular disturbances are the hot flushes, which usually involve the head and neck. These disturbances may occur with considerable frequency and embarrassment to the patient.

Estrogens are used to alleviate the disagreeable menopausal symptoms. This therapy must often be augmented with barbiturates and bromides. The frequency of administration of estrogens is dependent on the severity of the symptoms. We have found it necessary to give injections of estrogens on an average of three times a week in many of the patients.

It is our impression that the depressive and anxiety tension states are the causes of irritability and fatigue. The successful management of the tension state should favorably affect these symptoms. We postulated that a compound with muscle-relaxing properties would be the answer.

A compound, 2, 2-diisopropyl-4-methanol-1, 3-dioxolane, (dimethylyn)**, was made available for study in various spastic conditions. This compound was supplied in gelatin capsules, each containing 0.25 gram. The pharmacology and toxicology of this compound were determined by Berger and associates.[1] They found the LD50 to be 750 mg. per kilogram as compared to 500 mg. of myanesin per kilogram. The paralyzing dose of myanesin was found to be 180 mg. per kilogram as compared to 155 mg. of the dioxolane per kilogram.

Twenty-five patients, average age 48.2 years, were selected for treatment with dimethylyn. These patients had been getting an average of 3 injections of estrogens weekly. In addition to the estrogens, the patients were taking barbiturates and bromides.

Dimethylyn was prescribed in 0.25 gram doses (one capsule) after meals and at bedtime. If the patient did not feel relaxed within 3 days, the dose was increased to 0.5 gram (2 capsules) after meals and at bedtime. All other medication was discontinued during the dimethylyn treatment.

Of the 25 patients started on dimethylyn, 3 patients had to discontinue the medication because of nausea and regurgitation, but 22 patients continued the treatment, although several did complain of some gastric disturbances.

The need for barbiturates and bromides was eliminated while the patients were on dimethylyn. It was also observed that a majority of the patients could get along on one or two injections of estrogens monthly instead of the 8 or 12 injections previously required.

When definite clinical improvement was manifested, (10 days to 2 weeks), the dose of dimethylyn was reduced and the patient was placed on what was considered a maintenance dose. This ranged from 1 to 2 capsules daily, and was found to be adequate in a majority of the patients.

Summary

A new compound, 2, 2-diisopropyl-4-methanol-1, 3-dioxolane (dimethylyn) was used in the treatment of certain menopausal symptoms. This compound has muscle-relaxing properties.

Twenty-five patients were started on dimethylyn, however, only 22 continued the treatment, with gratifying results. The number of estrogen injections was reduced and the need for bromides and barbiturates was eliminated. Three patients discontinued the treatment because they could not tolerate the compound.

Comment

This clinical evaluation is presented as a preliminary report in the hope that other investigations of dimethylyn in the treatment of menopausal symptoms may be stimulated.

143 N. Broom Street.

REFERENCE

1. Berger, F. M., V. Boekelheide, and D. S. Tarbell: The Pharmacological Properties of Some 2-Substituted-4-hydroxy-methyl-1, 3-dioxolanes, Science, 108: 561. (Nov. 19) 1948.

---

*Attending Chief of Communicable Diseases, Doris Memorial Unit, Wilmington General Hospital.

**Supplied by the Medical Research Department, National Drug Company, Philadelphia.

Committee on Trauma
American College of Surgeons
MANAGEMENT OF ACUTE HEAD INJURIES

By a Special Committee of
The Harvey Cushing Neurosurgical Society

Head injuries may be classified as (A) open and (B) closed. Open injuries incur the risks of (1) hemorrhage and (2) wound infection. Closed injuries involve the risks associated with (1) immediate destruction of brain tissue (contusion, laceration, etc.) and (2) progressive damage secondary to (a) cerebral compression due to intracranial hemorrhage or edema, and (b) anoxia resulting from an inadequate airway.

For clarity, the treatment of open and closed wounds will be considered separately in this bulletin, but it is to be emphasized that both often are seen in the same patient and require consideration jointly.

Treatment of Open Wounds

The proper treatment of *lacerations of the scalp* consists of thorough cleansing, débridement and snug closure. As a first-aid measure, a compression bandage should be applied to control bleeding. Externally protruding foreign bodies should not be manipulated. When the patient's general condition permits and adequate equipment is available, the following procedure should be undertaken:

(1) Shave scalp widely about the wound.
(2) Cleanse wound with soap and water and irrigate thoroughly with copious amounts of solution (saline or water).
(3) Infiltrate margins of scalp wound with procaine.
(4) Remove dirt and excise devitalized portion of scalp.
(5) Explore skull for fracture.
(6) If no fracture, close wound snugly in one or two layers with interrupted sutures of nonabsorbable material.
(7) Give antitetanic serum or tetanus toxoid.

Simple lacerations may be closed in the Emergency Room by a single operator, but it is more satisfactory if the operator has an assistant to compress the margins of the wound to control bleeding.

Where the *laceration overlies a fracture*, surgical correction should be undertaken only in the Operating Room, for it may be necessary to remove dirt, hair, or débris from the fracture line or to remove bone fragments. One should be prepared to deal with bleeding from the dura and brain.

If the *brain is lacerated* or *foreign bodies are retained* within the brain substance, all macerated brain tissue should be removed, the foreign bodies removed if possible, particularly if they are nonmetallic, all bleeding controlled and the dura and scalp closed snugly. Surgical treatment of these wounds requires experience in brain surgery and special equipment (suction, lighting, electrocoagulation, etc.). With the use of chemotherapeutic and antibiotic agents, it is permissible to defer operative closure of wounds for many hours pending improvement in the patient's general condition and analysis of his neurologic status.

Leakage of cerebrospinal fluid from the nose or ear constitutes a special problem. Any cerebrospinal fluid fistula invites the risk of meningitis. Now, with an adequate screen of antibiotic and chemotherapeutic agents, one is justified in waiting ten to twelve days pending spontaneous closure. If the leak persists longer than this, surgical closure of the fistula should be considered. Some feel that lowering of the spinal fluid pressure to 90 mm. of water by spinal drainage every twelve hours promotes spontaneous closure. Fortunately most fistulas do close spontaneously.

Closed Wounds

One of the most frequent causes of death after head injury is progressive cerebral damage due to anoxia. Many factors contribute to this:

(1) The capacity of the contused brain to utilize oxygen is diminished.
(2) The cerebral blood flow is reduced, even though blood pressure may be elevated.
(3) The oxygen concentration of the blood is diminished as the result of a disturbed respiratory center and obstruction of the respiratory tract (tongue, mucus, pneumonitis).

The treatment in such cases is the maintenance of an adequate airway and the administration of oxygen. Patients frequently improve remarkably after clearing the airway and administering oxygen. The most satisfactory way of giving oxygen is by nasal catheter. Oxygen tents and masks interfere with attempts to keep the airway patent. Constant nursing attention, with a suction apparatus for the removal of mucus, is necessary. This may be supplemented by postural drainage (head down on face). Tracheotomy is indicated in certain cases.

The *differential diagnosis* between surgical and nonsurgical lesions is of primary importance in the management of acute head injuries and usually depends upon the patient's course. Hence, a carefully taken history, particularly as relates to the onset and duration of unconsciousness, and frequent and repeated neurological examinations are necessary.

Intracranial clot, such as extradural, subdural or intracerebral hematoma, usually is incompatible with life and requires surgical removal. Most patients with these lesions show progressive stupor, convulsions, focal paralyses and disturbance of the vital signs, such as alteration in pulse, respirations, etc. If the patient has been conscious and then loses consciousness, an expanding intracranial lesion is probably present. The lucid interval may be prolonged (days or weeks) with subdural hematoma. If the patient has remained continuously unconscious from the moment of impact, the coma may be due in part to contusion of the brain and in part to an expanding lesion. In such instances, it may be impossible to make a differential diagnosis clinically, and cranial exploration then is necessary if the patient's condition is growing worse.

The *surgical management* of these lesions is not within the scope of this paper.

Special Examinations and Treatments

(1) *X-rays.* X-rays of the skull rarely influence the course of treatment, yet the procedure of taking films involves considerable manipulation and wastes time, both of which are detrimental to the ill patient. Hence, it is advisable that x-ray examination of the skull be deferred until such time as the patient is co-operative and his condition stabilized. Attention should always be given to the possibility of injury elsewhere, particularly to the cervical spine.

(2) *Position of Patient.* The position of election is with the head elevated, since this reduces venous congestion. The advantages of this position, however, are far outweighed by the disadvantages which might accrue from an obstructed airway, and if the patient's airway cannot be kept completely open with the head elevated, this position should be changed to one which best promotes an adequate airway.

(3) *Shock.* Surgical shock (peripheral vascular collapse) is rare in head injuries per se, but, when present, the usual measures (Trendelenburg position, intravenous fluids, heat, etc.) should be employed. Shock usually indicates associated injuries and demands primary consideration.

(4) *Fluid Balance.* In an effort to reduce or limit cerebral swelling after head trauma, certain writers have advocated rigid dehydration by withholding fluids, administration of hypertonic solutions intravenously, the use of magnesium sulphate enemas, etc. Rigid dehydration does harm rather than good to an ill patient, as the other vital body functions are interfered with. Fifteen hundred to 2000 cc. daily are necessary to keep the patient in fluid balance.

It is necessary in this connection to keep close watch upon the protein metabolism. Coma, stupor and prolonged confusion often result from protein depletion and can be prevented or corrected by the administration of protein hydrolysates, plasma or whole blood. If coma is prolonged, gastric feedings by nasal catheter are indicated, using a high protein diet.

(5) *Spinal Puncture.* Considerable controversy prevails concerning the indications for and the merit of spinal puncture in the diagnosis and treatment of head injuries. Some advocate daily spinal punctures as routine in the treatment of head injuries, but this is not generally accepted. The authors of this bulletin consider the indiscriminate use of spinal punctures dangerous. The following are considered proper indications for spinal puncture.

(A) Diagnostic—

- (a) To determine pressure where intracranial clot is suspected.
- (b) To determine the presence and/or degree of bleeding.

(B) Therapeutic—

(a) To lessen intracranial pressure by withdrawing fluid as a temporary expedient pending measures that provide more lasting control of increased intracranial tension, such as surgical evacuation of clot.

(b) Evacuation of bloody fluid when signs of meningisimus appear, usually four to eight days. Evacuation of fluid at this time usually relieves headache and speeds recovery.

Technique. When indicated, a spinal puncture should be done with the patient in the lateral recumbent position, using a standard spinal puncture needle.

The operator should make the following determinations: color of the fluid, initial pressure, final pressure and the amount withdrawn.

Jugular compression tests should not be carried out unless one suspects injury to the spinal column. These tests give no information of value with reference to the brain, and the sudden rise in spinal fluid pressure which follows jugular compression may be harmful after head injury.

Spinal puncture should not be attempted if the patient is unco-operative, for the information obtained is unreliable, and struggling against resistance may be harmful.

(6) *Control of Restlessness.* Patients who are restless and confused constitute a difficult nursing problem, and sedative medication may be necessary. Paraldehyde administered rectally or barbiturates — sodium amytal, sodium luminal — intramuscularly or intravenously are satisfactory. The latter are particularly indicated for the control of convulsions. Morphine and codeine are contraindicated because of depression of respirations, edema of the larynx, and alteration of pupils (diagnostic).

(7) *Convalescence.* Early ambulation is recommended after head injury. The patient should receive physical therapy in the form of active and passive exercises early and should be gotten out of bed into a chair as soon as he is able and willing to co-operate. Prolonged bedrest is conducive to traumatic neurosis.

Lacerations of the brain, such as are associated with depressed fractures and penetrating wounds, are frequently followed by a convulsive disorder. These patients should be given anticonvulsive medication for a period of several months after injury. The drug of choice is Dilantin Sodium gr. 1½ three times daily.

Many patients complain of residual headache, particularly in the posterior part of the head, and of dizziness. These symptoms generally are classified as posttraumatic neuroses. Recent observations indicate that they may result from trauma to the cervical roots and at times are relieved by cervical traction.

Today, because of procedures which have become routine, the private physician's office is a bulwark against such diseases as smallpox and diphtheria. In like manner, it can become one of the most effective agencies for tuberculosis control. By promoting such a public health measure, the general practitioners of the nation would be acting in line with the great tradition of the profession as a force for prevention as well as cure of disease. A. C. Christie, M. D., Pub. Health Rep., June 2, 1950.

Tuberculosis is the most prevalent disease in China. In the city of Peking, with a population of about 2,000,000, the number of deaths from tuberculosis is about 4,600 a year. For the whole nation, with a population of 450,000,000, the total number of deaths from tuberculosis is about a million annually. In other words, about twice as many people as live in Minneapolis die from this disease each year in China. Most of the tuberculosis patients are between 20 and 30 years of age, the most productive period. Kenneth K. D. K'an, M. D., Journal-Lancet, April, 1950.

Studies of the coincidence of pulmonary scarring or calcified nodules and histoplasmin skin sensitivity in tuberculin-negative persons have emphasized that lesions which in the past would have been interpreted as tuberculous in origin may be the result of an infection with histoplasma capsulatum or some other related organism. Samuel Saslaw, M. D., Ph.D., M. C., A. U. S., and Charlotte C. Campbell, Am. J. Pub. Health, April, 1950.

Editorials

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building

Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place

M. A. Tarumianz, M. D. ....Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 23 February, 1951 No. 2

Formation of American Medical Education Foundation

The action of the Board of Trustees at the Cleveland meeting in appropriating one-half million dollars as the Association's initial contribution to an annual fund to be raised by the medical profession to assist the medical schools has been widely applauded as one of the most constructive and important programs ever undertaken by the American Medical Association. In announcing the establishment of this fund, the Board of Trustees expressed the hope that the Association's contribution would be greatly augmented by gifts from many other sources and urged all members of the Association to contribute individually. The initial response of the profession has been most gratifying. Many physicians in attendance at the Cleveland meeting inquired how they should make their contributions, and since the meeting letters requesting similar information have been received daily at Association headquarters.

It can now be announced that the American Medical Education Foundation has been established as a not-for-profit corporation, under the laws of the state of Illinois, to receive and distribute contributions to the fund from the individual members of the medical profession and friends of the profession. The Commissioner of Internal Revenue has been asked to rule that gifts to the foundation will be deductible in the computation of income taxes. An 11 man board of directors chosen from the Board of Trustees, the officers of the Association and the Council on Medical Education and Hospitals will be responsible for arranging for the distribution of the funds to all approved medical schools. The funds are to be unrestricted, with each medical school free to determine how it can best use its share to further the basic training of its students. It is planned that the foundation will coordinate its activities closely with other major efforts to raise funds for medical education from voluntary sources, which it is hoped will be announced shortly.

Each member of the medical profession is urged to demonstrate his support of this new undertaking by contributing promptly and generously. Because of rising costs, inflation, fewer large individual benefactions and reduced income from endowments, the medical schools need, without further delay, assistance of the type this fund can give. It is the desire of the foundation that the first annual disbursement of funds to the medical schools be made this spring. It is clear that, if the foundation's contribution is to be an effective one, a substantial fund must be raised by the medical profession within the next few months. It is therefore urged that each physician consider an annual contribution of $100. Many of the contributions already received exceed this figure. When a physician feels that this amount is beyond his means, smaller contributions will be welcome, but the profession must recognize that substantial sums are required and that token contributions alone will not be sufficient.

Almost every physician now practicing received his medical education for less than what it cost his medical school. While many physicians have discharged this debt to society in full or in part, by public and charitable activities and by donations to the schools with which they have been associated, many are still indebted to one or more medical schools for their training as students, interns or residents. Furthermore, the medical profession has traditionally accepted a large measure of responsibility for the training of the continuing flow of young physicians, on which it must depend for recruits and replacements in its efforts to serve humanity. It is to be expected, therefore, that all physicians, regardless of the other contributions they may have made to society, will want to share in the responsibility of making the foundation a success.

The American Medical Association has indicated its belief that the possibilities of securing adequate support for medical education from voluntary sources are far from exhausted. To prove this, actions as well as words are required. The challenge has now been made directly to the medical profession. The members of the profession can meet this challenge by sending their contributions today to the American Medical Education Foundation, 535 North Dearborn Street, Chicago 10.

Editorial, J.A.M.A., Jan. 20, 1951.

DR. TARUMIANZ HONORED

At the annual dinner meeting of the Delaware Chamber of Commerce the Associate Editor and Managing Editor of THE JOURNAL was signally honored. The Chamber made the first presentation of the Marvel Cup, to be awarded each year to a citizen making an outstanding contribution to his fellow men. The first award went to Dr. M. A. Tarumianz, superintendent of the Delaware State Hospital. Dr. H. V. Holloway, former head of the state school system, who made the presentation, declared that Dr. Tarumianz is a "man of vision, energetic personality, sympathetic physician, skilled psychiatrist, efficient administrator, outstanding citizen. . . ."

In presenting the Marvel Cup to Dr. Tarumianz, Dr. Holloway pointed to the winner's service to the state since 1918, and more particularly since 1926, when Dr. Tarumianz became superintendent of the hospital.

Serving on the award committee with Dr. Holloway were Judge Richard S. Rodney and Former Senator John G. Townsend, Jr.

Gov. Elbert N. Carvel greeted the dinner-goers on behalf of the state.

The main address of the meeting was made by U. S. Senator Everett M. Dirksen.

The Marvel Cup was established by the late Josiah Marvel, one of Delaware's leading attorneys and a former President of the American Bar Association.

BOOKS FOR REVIEW

In the January issue of THE JOURNAL, page 23, appeared a list of books for review, with an invitation to our members who feel qualified to do so to take home and review some of these books. We are trying to develop additional reviewers in the various fields, since many of our older and experienced reviewers are finding it hard to spare the necessary time. Our reviews should be brief; long, critical and analytical reviews belong only in the special journals. For his trouble, the reviewer gets the book to keep. Come to 822 North American Building, Wilmington, between 4:00 and 4:30 p. m., Monday through Friday.

NEW DIRECTORY PAGE

At the end of this issue is the 1951 Directory Page. Please inform us of any errors noted. Read this page as carefully as you read any other page of text in THE JOURNAL, and note carefully just what committees you are on this year, who your other committee members are, and who is the chairman. Then do all you can to make your committee a success.

HAVE YOU READ IT?

Bernard DeVoto, in *Harper's Magazine* for January, 1951, makes some dirty digs, mostly unfounded, at the medical profession. A splendid and tart reply appears in the *Journal of the A.M.A.* for January 27, 1951, page 250, over the name of Dr. J. Richard Durham, of Wilmington. If you have not yet read this letter to Mr. DeVoto you ought to. Also, read the editorial in the same *Journal* on page 232.

MISCELLANEOUS

Department of Justice
UNITED STATES ATTORNEY
District of Delaware
WILMINGTON, DELAWARE

February Ninth
1951

Dr. W. Edwin Bird
Executive Secretary
Medical Society of Delaware
822 North American Building
Wilmington, Delaware

Dear Dr. Bird:

As a result of several investigations of violations of the Harrison Narcotic Law, it is apparent that a great number of Delaware doctors are aiding in the violation of this act. It appears that some doctors leave with pharmacists signed prescription blanks for the purpose of taking care of prescriptions that are phoned in by the various doctors. This is definitely a violation of the law on the part of the pharmacist as well as the doctor.

The District Attorney's office has declined to proceed criminally against the pharmacists involved, but civil sanctions will be invoked by the Bureau of Narcotics. I sincerely hope that we will not be compelled in the future to take criminal action against any pharmacist or doctor.

I suggest that you advise the medical profession that they comply with the provisions of the narcotic law. Any further derelictions on the part of the pharmacists and the medical profession will cause undue embarrassment to all concerned.

Very truly yours,
Francis A. Reardon
Assistant United States Attorney.

Delaware Heart Association

The Delaware Heart Association has made available for distribution the following educational material which has been reviewed by a committee composed of both laymen and medical men.

1. Good News About Your Heart—by Paul D. White, M. D.
2. Employment and Heart Disease — Leonard J. Goldwater, M. D.
3. Heart of the Home for Housewives — American Heart Association.
4. Low Sodium Diet (A cook book)—Mass. Heart Association.

All of these are informative and helpful to the person who is learning how to live with a damaged heart and yet get the optimum of happiness from life. This material may be secured upon request from physicians for their patients, free of charge.

Modern Concepts of Cardiovascular Disease and the journal, *Circulation* may be obtained through membership subscriptions made to the Delaware Heart Association.

1. Annual Membership Subscription (includes Modern Concepts of Cardiovascular Disease, January through December, and admission to Scientific Sessions.) $2.50
2. Journal Membership Subscription to *Circulation* $10.00; Privileges of Annual Membership as described above may be included for $12.00

Membership to the Delaware Heart Association is available at $1.00 per annum. This includes membership in the American Heart Association.

American Medical Association Associate Membership

535 North Dearborn Street, Chicago 10,
January 24, 1951.

Dr. W. Edwin Bird

Dear Doctor Bird:

The status of associate membership in the American Medical Association has been subject to some misinterpretation. The House of Delegates of the American Medical Association at its meeting in Cleveland in December 1950 adopted a report of its Interim Committee on Constitution and By-Laws in which it was recommended that Article 5, Section 1 (B) of the Constitution be amended so that it will read:

> "Associate Members.—Associate membership in the American Medical Association shall be limited to those members of constituent associations who are not active members of the American Medical Association or the constituent association and who hold the degree of

Doctor of Medicine or Bachelor of Medicine, subject to the provisions of the By-Laws."

This amendment will be acted on at the Annual Session in June.

Members of constituent associations who are not entitled to exercise the rights of active membership in their constituent associations, including the right to vote and hold office, may become associate members of the American Medical Association when officially reported to this office by the secretaries of the constituent associations. Full time teachers of medicine, government employed physicians and physicians in certain other categories who are not now eligible for active membership in component or constituent medical societies but who do hold some other type of membership, *by whatever name called*, (associate, affiliate, honorary, etc.) are eligible for the classification of associate membership in the American Medical Association as defined above. The names of these members should be reported to the Secretary of the American Medical Association so that they may be properly designated in our associate membership files.

The term "associate" as used in this memorandum applies only to associate membership *in the American Medical Association.* Members of constituent associations whose membership is termed "associate" may or may not be eligible for associate membership in the American Medical Association depending on fulfillment of the requirements of the Constitution of the American Medical Association as defined herein.

The representation of constituent state and territorial medical associations in the House of Delegates of the American Medical Association is apportioned on the basis of the dues paying *active* members of the constituent association. The provision of associate membership therefore does not affect the representation in the House of Delegates of the American Medical Association of a constituent association. Its chief value is the opportunity it provides those affiliated with constituent associations who are not eligible for active membership in the American Medical Association to hold associate membership.

Very truly yours,

George F. Lull.

Collier's Story

December 14, 1950.

MR. LEWIS RUPPEL,
Editor, Collier's,
640 Fifth Avenue,
New York 19, New York.

Dear Mr. Ruppel:

I have read the article by Maisel, "Our Alarming Doctor Shortage", and a newspaper advertisement about this article in Collier's.

I should like you to publish this letter and the attached chart, which shows quite clearly that there have been enough doctors to achieve remarkable health progress, enough to reduce infant mortality from 100 (deaths per 1,000 live births) in 1910 to 30 in 1950, enough to reduce the maternal mortality rate from (8 or) 10 to 1 and enough to increase life expectancy at birth from 51 years in 1910 to 69 (or 70) years in 1950. The chart does not show: (1) the upward trend since 1910 in Class "A" medical school graduates; (2) that there are fewer persons per doctor in the United States than in any other country except Palestine; (3) that the number of physicians has been increasing more rapidly than the entire U. S. population during the past two decades; (4) that a relatively large proportion of the nation's physicians served in the armed services during World War II without ill effects on the health of civilians.

The public is interested in the quality and quantity of medical service available; Mr. Maisel is interested in the number of physicians.

There are also many other misleading implications in Mr. Maisel's article.

Very truly yours,

George F. Lull.

Enc. chart

N.B.—To date (1-19-51) this letter has not been acknowledged by the editor of Collier's.

A.C.S. Sectional Meeting

I am writing to extend a cordial invitation to physicians and surgeons in the state of Delaware to attend a three-day Sectional Meeting of the American College of Surgeons in Philadelphia on March 5, 6, and 7. The Bellevue-Stratford will be Headquarters for the meeting and requests for hotel accommodations should be directed to the Philadelphia Convention and Visitors Bureau, 17th and Sansom Streets, Philadelphia 3, Pennsylvania.

The program for this meeting will include new surgical motion pictures, a cancer symposium, and panels or papers on Vascular Surgery, Chest Injuries, Fractures about the Ankle Joint, Anesthesia Problems in Poor Risk Patients, Neck Surgery, Gastric Surgery, Cancer of the Colon and Rectum, and Emergencies Arising during Operation. A special program, including symposia on trauma and diagnosis of acute conditions of the abdomen, has also been prepared for general practitioners. The first two days of the program will be presented at the Headquarters Hotel and on March 7 the hospitals in Philadelphia will offer a full day of surgical clinics for those in attendance at the meeting.

A five-dollar registration fee will be required, except from Fellows and members of the Junior or Senior Candidate Groups of the College, and interns and residents, but we are confident that the physician or surgeon in practice will find the program worth many times the registration fee.

As Chairman of the Committee on Arrangements I can assure you that the Fellows of the College in Philadelphia will give full cooperation in assisting physicians and surgeons from Delaware to take full advantage of this excellent meeting if they come to Philadelphia on March 5, 6, and 7.

Sincerely yours,

W. Emory Burnett, M.D., F.A.C.S.
Chairman, Committee on Arrangements.

OBITUARY

Richard Raymond Tybout, M. D.

Dr. R. Raymond Tybout, prominent Wilmington opthalmologist, died on January 29, 1951, after a stroke the day before, aged 85.

A member of the family for whom Tybout's Corner was named, he was born and reared at Belview, between that corner and Delaware City. He was the son of George Z. and Elizabeth M. Tybout.

After attending Newark Academy, he received his degree from the University of Pennsylvania Medical School in 1888. Dr. Tybout practiced with Dr. John J. Black, New Castle, from 1888 to 1896. For two years he did work in eye, ear, nose and throat diseases in Philadelphia, New York and London to become a specialist in that branch of medicine.

In 1914, Dr. Tybout gave up his practice because of failing health. Later his health improved and he volunteered as a medical officer in the Army in World War I, serving at Fort Oglethorpe, Ga. After his discharge in 1918, he resumed his studies in eye, ear, nose and throat work in New York, Chicago, and Rochester, N .Y., and about 1928 started the practice of that specialty in Wilmington. He maintained offices in the Medical Arts Building.

Dr. Tybout retired in 1946 and moved to Florida. He returned to Delaware about two years ago.

He is survived by his widow, Mrs. Lillian Alton Tybout; two sons, Richard A. Tybout, Ann Arbor, Mich., a student at the University of Michigan; F. Alton Tybout, a student at Duke University, and Miss Elizabeth Tybout of New Castle. Surviving nieces and nephews include: Miss Marion T. Everett and Charles Everett, both of Montchanin; Mrs. Victor duPont Guyencourt; Miss Ethel M. Reybold, Mrs. Frank C. Warner, Mrs. Harry C. Price, and Miss Alice Reybold, all of Delaware City; Frederick K. Reybold, Wilmington; Lt. Gen. Eugene Reybold, Washington, D. C., and Malcolm D. Reybold, Leesburg, Va. A granddaughter, Alice M. Tybout, of Ann Arbor, also survives.

He was one of the founders of the Bachelors Ball in Wilmington, and was also a charter member of the Wilmington Country Club.

Funeral services were held in the Presbyterian Church at New Castle on January 31st. The Rev. Russell L. Jaberg, pastor, officiated, assisted by the Rev. William D. Gibson, minister of the Presbyterian Church at Rehoboth Beach, a former pastor of the New Castle church.

Interment was in Kirkwood Cemetery at St. Georges.

Sounds Good But It's Not Practical

At the recent meeting of the American Association for the Advancement of Science in Cleveland, some of the scientists in attendance suggested that the so-called shortage of physicians problem could be solved by granting "bachelor degrees" in medicine to those who can't get into medical school and that such degree holders be permitted to engage in limited practice, caring for ordinary injuries and ills and referring serious cases to doctors of medicine.

Doubtless, the recommendation was made with the best of motives. It reveals, however, that the authors are unfamiliar with medicine history or have chosen to ignore it.

No system of limited practice which has ever been tried (almost every conceivable kind has been) has worked successfully. Ultimately, the limited practitioner finds himself stymied because of his limitations. Being human, his inclination is to step over the line; as is frequently done. Ultimately, he seeks a correction for this through legislation which would grant him rights and privileges he does not deserve and which would exceed his qualifications. If he gets his way, the public is offered little, if any, protection.

The impractical approach to the problem offered at the A.A.A.S. meeting is not the answer.

There may be plenty of room for argument in favor of a revision of medical education policies. Perhaps the period of training could be shortened or accelerated. It is charged that too much emphasis is placed on research and certain other subjects; too little emphasis on subjects which are basic in clinical practice. Nevertheless, changes should be made carefully and cautiously. Certainly no good could be accomplished by turning loose still another group of half-trained practitioners who, eventually, would be dissatisfied with their fate and who would fail to give the people what they want, need and think they are getting.

Ohio S. M. J., February, 1951.

Trouble Ahead for V. A. Hospitals?

On April 1, Vice-Admiral Joel T. Boone, retired, will take over the medical directorship of the Veterans Administration, succeeding Dr. Paul B. Magnuson who assumed office three years ago when Dr. Paul Hawley left that post.

The announcement regarding the appointment of Boone said that Dr. Magnuson resigned. Magnuson contends that he was "fired," pointing out that the "resignation" was one which he signed three years ago when he took office. In case you don't know, that's bureaucratic policy—hiring 'em and getting their resignation at the same time.)

Magnuson says the fight is one of long-standing—a fight in which he has tried to make medical men top authorities in V. A. hospitals, which policy has been opposed by those who want business administrators (some say political appointees) on the top rung.

The situation in the V. A. is being viewed with alarm by those who see a drift back to conditions which existed before Generals Bradley and Hawley — later on, Magnuson.— put new policies into effect. The matter of Dr. Boone's appointment is incidental. From the standpoint of experience and reputation he qualifies. The real issue is: Does the shake-up mean drastic changes in basic policy?

Ohio S. M. J., February, 1951.

Tuberculosis rates . . . rose in every European country seriously affected by the war, and there is now a growing realization in Europe that tuberculosis is our main public health problem. Marc Daniels, M. R. C. P., D. P. H., Brit. M. J., Nov. 12, 1949.

BOOK REVIEWS

Nursing in Prevention and Control of Tuberculosis. By H. W. Hetherington, M. D. and Fannie W. Eshleman, R. N., B. S. Pp. 356. Cloth. Price $4.50, New York: J. P. Putnam's Sons, 1950.

Tuberculosis is still a medical and a public health problem, especially in the states of Arizona, New Mexico, District of Columbia, Maryland, Kentucky, Tennessee and Delaware, where the death rate in 1947 was over 45.4 per 100,000 population as compared to the rate for the United States of 33.5. The authors justly stress the fact that the control of tuberculosis is a public healh problem, since this is an infectious disease affecting the patient and endangering all those in contact with him.

The author's primary objective in this book is to foster better nursing care for tuberculosis patients through improved nursing service and techniques. Recent advances in the control, laboratory, antibiotics, public relief, rehabilitation, and compulsory isolation of infectious persons are discussed.

The photographic illustrations of nursing methods in the care of the patient are of great help in impressing the student nurse of her responsibilities. The higher rate of tuberculosis in nurses as compared to girls in other professions but of the same age, is also discussed.

This is a very valuable book on tuberculosis not only for nurses but also for lay people who are interested in this disease, as the book is written in easily understood language. The questions and references given at the end of each chapter add to the usefulness of the book.

History and Trends of Professional Nursing. By Deborah M. Jensen, R. N., Pp. 356. Cloth. Price, $3.25. St. Louis: C. V. Mosby Company, 1950.

Those interested in the history and development of nursing through the ages will find this a well written reference book of essential information. The list of references is supplied at the end of each chapter. Graduate nurses and nursing schools will find the book useful for the latest in the organizational and professional developments in nursing service and education, besides the references in the history of nursing.

Textbook of Anatomy and Physiology. By Catherine P. Anthony, B. A., R. N., Pp. 573, with 208 illustrations including 16 color plates. Cloth. Price $4.00 . St. Louis: C. V. Mosby Company, 1950.

This is a text book for student nurses and contains essential material that a nurse is required to learn in anatomy and physiology. The basic facts of body structure and function are emphasized in a well organized and outlined method, which makes it easier for the student nurse to comprehend these subjects usually considered difficult from the standpoint of teaching. A list of review questions at the end of each chapter aids in studying.

Scientific Principles of Nursing. By M. Esther McClain, R. N., M. S., Pp. 353. Cloth. Price, $3.00. St. Louis: C. V. Mosby Company, 1950.

This should be a "must" text for every nurse. The title of the book perhaps is misleading because the word "scientific" gives one the impression that this is a theoretical treatise on nursing. On the contrary, it is the most practical book which a student nurse can use in her everyday nursing practice. It is exceptional in that most of the emphasis is centered on the care and comfort of the patient, with well-explained "scientific" reasons why everything that the nurse does and must do is essential for the welfare of the patient. The reason for every medical and nursing procedure is explained in plain language. The psychological relationship of patient and nurse are justly emphasized.

FOR RENT OR SALE
IN WILMINGTON

Suite of Offices

IN WHICH A GOOD LUCRATIVE GENERAL PRACTICE HAS BEEN ENJOYED BY A PHYSICIAN WHO WISHES TO RETIRE.

If Interested Apply By Telephone—
Wilm. 2-4812 Daily Between
9:00 and 12:00 a.m.

1789—MEDICAL SOCIETY OF DELAWARE—1951

OFFICERS

President, Charles E. Wagner, Wilmington
President-Elect, Ervin L. Stambaugh, Lewes
Vice-President, Benjamin F. Burton, Dover
Secretary, Andrew M. Gehret, Wilmington
Treasurer, Joseph M. Messick, Wilmington
Executive Secretary, W. Edwin Bird, M. D., 822 N. American Bldg., Wilmington

American Medical Association (1951) Delegate: James Beebe, Lewes Alternate: C. E. Wagner, Wilmington
Representative to Delaware Academy of Medicine, W O. LaMotte, Wilmington

STANDING COMMITTEES

Scientific Work

R. W. Comegys, Clayton
O. A. James, Milford
A. M. Gehret, Wilmington

Medical Education

R. O. Y. Warren, Wilmington
J. L. Fox, Seaford
H. W. Smith, Harrington

Publication

W. E. Bird, Wilmington
M. A. Tarumianz, Farnhurst
A. M. Gehret, Wilmington

Public Laws

J. S. McDaniel, Dover
J. W. Lynch, Seaford
E. R. Mayerberg, Wilmington
J. D. Niles, New Castle
V. D. Washburn, Wilmington

Budget

J. M. Messick, Wilmington
Charles Levy, Wilmington
M. A. Tarumianz, Farnhurst
W. T. Chipman, Harrington
J. R. Elliott, Laurel

SPECIAL COMMITTEES

Advisory, Woman's Auxiliary

Roger Murray, Wilmington
Charles Levy, Wilmington
J. M. Messick, Wilmington
J. J. Lazzeri, Smyrna
J. R. Elliott, Laurel

Cancer

D M. Gay, Wilmington
J. V. Casella, Wilmington
J. F. Hynes, Wilmington
E. G. Laird, Wilmington
W. W. Lattomus, Wilmington
C. J. Prickett, Smyrna
R R. Layton, Dover
James Beebe, Lewes
Bruce Barnes, Seaford

Tuberculosis

L. D. Phillips, Marshallton
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
J. S. McDaniel, Jr., Milford
L. C. McGee, Wilmington
J. M. Messick, Wilmington
C. J. Prickett, Smyrna
William Marshall, Jr., Milford
C. M. Moyer, Laurel

SPECIAL COMMITTEES

Maternal and Infant Mortality

A. H. Williams, Laurel
C. T. Lawrence, Jr., Wilmington
C. L. Hudiburg, Wilmington
S. W. Rennie, Wilmington
R. O. Y. Warren, Wilmington
B. F. Burton, Dover

Mental Health

G. W. K. Forrest, Wilmington
J. S. McDaniel, Jr., Dover
O. V. James, Milford

Industrial Health

L. C. McGee, Wilmington
G. H. Gehrmann, Wilmington
H. L. Springer, Wilmington
E. H. Mercer, Dover
H. V'P Wilson, Dover
D. L. Bice, Seaford
A. C. Smoot, Georgetown

Vocational Rehabilitation

James Beebe, Lewes
G. A. Beatty, Wilmington
I. M. Flinn, Wilmington
T. B. Strange, Wilmington
W. C. Pritchard, Smyrna

Heart Disease

E. R. Miller, Wilmington
A. H. Clagett, Jr., Wilmington
E. M. Krieger, Wilmington
F. R. Everett, Dover
R. L. Klingel, Lewes

Diabetes

L. B. Flinn, Wilmington
J. R. Durham, Jr., Wilmington
Charles Levy, Wilmington.
L. L. Fitchett, Milford

Arthritis

A. J. Heather, Wilmington
I. M. Flinn, Wilmington
A. R. Shands, Wilmington
C. C. Fooks, Milford
O. A. James, Milford

Health & Sanitation

E. R. Mayerberg, Wilmington
G. A. Beatty, Wilmington
V. D. Washburn, Wilmington
W. T. Chipman, Harrington
H. V'P. Wilson, Dover
Bruce Barnes, Seaford
E. L. Stambaugh, Lewes

Fees for Welfare Patients

R. J. Comegys, Clayton
A. R. Crutchley, Middletown
J. W. Lynch, Seaford

SPECIAL COMMITTEES

Medical Service and Public Relations

E. R. Mayerberg, Wilmington
B. M. Allen, Wilmington
W. O. LaMotte, Wilmington
C. L. Munson, Wilmington
W. M. Pierson, Wilmington
J. S McDaniel, Dover
H. V. P. Wilson, Dover
J. W. Lynch, Seaford
O. A. James, Milford

Rural Medical Service

J. R. Downes, Newark
C. R. Donoho, Newark
J. D. Niles, Middletown
C. J. Prickett, Smyrna
H. W. Smith, Harrington
Bruce Barnes, Seaford
H. S. Riggin, Seaford

Care of Colored People

H. T. McGuire, New Castle
Conwell Banton, Wilmington
S. G. Elbert, Jr., Wilmington
I. J. MacCollum, Wyoming
J. L. Fox, Seaford

National Emergency Medical Service

J. R. Beck, Wilmington
C. L. Munson, Wilmington
W. F. Preston, Wilmington
S. H. Stradley, Wilmington
V. D. Washburn, Wilmington

Medical Economics

Ira Burns, Wilmington
J. S. McDaniel, Jr., Dover
J. E. Marvil, Laurel

Hospitals and Practice of Medicine

J. W. Howard, Wilmington
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
W. O. LaMotte, Wilmington
C. E. Wagner, Wilmington
J. S. McDaniel, Dover
J. B. Waples, Georgetown

Grievance Board

G. W. K. Forrest, Wilmington
I. L. Chipman, Wilmington
J. D. Niles, Middletown
I. J. MacCollum, Wyoming
James Beebe, Lewes

Social Hygiene

A. D. King, Wilmington
E. H. Mercer, Dover
James Beebe, Jr., Lewes

WOMAN'S AUXILIARY

Mrs. Douglas M. Gay, *President*, Wilmington
Mrs. S. W. Rennie, *President-elect*, Wilmington
Mrs. Andrew M. Gehret, *Recording Secretary*, Wilmington
Mrs. E. T. O'Donnell, *Corresponding Secretary*, Wilmington
Mrs. Lawrence W. Fitchett, *Treasurer*, *Milford*

NEW CASTLE COUNTY MEDICAL SOCIETY

Meets Third Tuesday

V. D. Washburn, *President*
W. W. Lattomus, *President-elect*
S. H. Stradley, Jr., *Vice-President*
H. H. Stroud, *Secretary*
C. M. Bancroft, *Treasurer*
E. C. Syrovatka, *Executive Secretary*

Councilors (1952): L. C. McGee, H T. McGuire, J. C. Pierson.

Delegates (1951): E. M. Bohan, Ira Burns, Junius A Giles, A. D King, E. G. Laird, W. O. LaMotte, Sr., Charles Maroney, E. M Mayerberg, W. M. Pierson, Edward Parvis, O. N. Stern, H. H. Stroud, M A. Tarumianz.

Alternates (1951): Steven Bartoshesky, Joseph Beck, Allen Fleming, Mildred Forman, David J. King, A. G. Lessey, Wm. T. McLane, Douglas Sanders, Paul Shaw, Roger B. Thomas, R. O. Y. Warren.

Delegates (1951-52): N. L. Cannon, I. L. Chipman, Sr., J. A. Giles, A L. Heck, Charles Levy, C L. Munson, M. B Pennington, J. C. Pierson, S. H Stradley, Jr., G. W. Vaughn, V. D. Washburn.

Alternates (1951-52): L. V. Anderson, R E. Allen, J W. Barnhart, J. M. Barsky, Jr., W. W. Briggs, Italo Charamella, J. A. Chrzanowski, C T. Lawrence, F. A. Jones, C P. Johnson, T E Resnick, F. S. Skara, H. A. Tarrant.

MEDICAL COUNCIL OF DELAWARE

Hon. Charles S. Richards, *President*; Joseph S. McDaniel, M. D., *Secretary*; Wallace M. Johnson.

KENT COUNTY MEDICAL SOCIETY

Meets First Wednesday

R. R. Layton, Jr., *President*, Dover
J. B. Baker, *Vice-President*, Milford
J. S. McDaniel, Jr., *Secretary-Treasurer*, Dover

Councilors. C. J. Prickett, Smyrna and Wm. Marshall, Milford.

Delegates: H. V. P. Wilson, Dover, and I. J. MacCollum, Wyoming.

Alternates: J S. McDaniel, Dover, and H W Smith, Harrington.

DELAWARE STATE DENTAL SOCIETY

J. S. Mack, *President*, Seaford
J. F. Maguire, *1st V. P.*, Wilmington
H. L. Kurfirst, *2nd V. P.*, Wilmington
James Krygier, *Secretary*, Wilmington
Louis Kreshtool, *Treasurer*, Wilmington
P. E. Musselman, *Delegate A.D.A.*, Newark.
Clyde Nelson, *Alternate A D.A.*, Milford.

DELAWARE STATE BOARD OF HEALTH

J. D. Niles, M. D, *President*, Middletown; I. J MacCollum, *Vice-President*, Wyoming; C. E. Moore, D. D. S., *Secretary*, Seaford; Bruce Barnes, M. D., Seaford; Mrs. C. M. Dillon, Wilmington; Mrs. A Louise Cochran, Middletown, R1; Howard N. Stayton, M. D., Wilmington; Mrs. N W. Voss, Wilmington. Floyd I. Hudson, M. D., *Executive Secretary*, Dover.

BOARD OF MEDICAL EXAMINERS

J. S. McDaniel, *President-Secretary*; Wm. Marshall, *Assistant Secretary*; W. E. Bird, J. E. Marvil, L. J. Jones.

SUSSEX COUNTY MEDICAL SOCIETY

Meets Second Thursday

O. A. James, *President*, Milford
J. L. Fox, *Vice-President*, Seaford
T. J. Tobin, *Secretary-Treasurer*, Milton

Councilors: J. W. Lynch, Seaford; A. C. Smoot, Georgetown.

Delegates: Bruce Barnes, Seaford; D. L. Bice, Seaford; C. M. Moyer, Laurel; G. M. Van Valkenburgh, Georgetown.

Alternates: W. G. Hume, Selbyville; R. L. Klingel, Rehoboth; A. C. Smoot, Georgetown; E. L. Stambaugh, Lewes.

DELAWARE ACADEMY OF MEDICINE

Open 10 A.M. to 5 P.M.

B. M. Allen, M.D., *President*.
W. M. Pierson, M.D. *First Vice-President*.
R. R. Wier, D.D.S., *Second Vice-President*.
A. M. Gehret, M.D., *Secretary*.
I. M. Flinn, M.D., *Treasurer*.
E. C Syrovatka, LL.D., *Librarian*.

DELAWARE PHARMACEUTICAL SOCIETY

Walter A. Schueler, *President*, Wilmington.
Harry C. Helm, *First Vice-President*, Dover.
Earl Hastings, *Second Vice-President*, Selbyville.
Walter E. Brown, *Third Vice-President*, Holly Oak.
J. Wallace Watson, *Secretary*, Edge Moor.
Albert Dougherty, *Treasurer*, Wilmington.

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 3

MARCH, 1951

Per Copy, 50c
Per Year, $4.00

A YEAR IN REVIEW

The Veterans Administration Hospital, Wilmington, Delaware, was activated March 21, 1950, by the transfer of 130 patients in approximately two hours from the temporary hospital at New Castle County Air Base to the new building at Elsmere.

We were immediately confronted with the tremendous problem of organization of staff and equipment, but in a relatively short time this was accomplished and we were proud to have in Delaware a Veterans Hospital adequately equipped and professionally staffed to offer to the veterans of Delaware and vicinity the professional services of a general medical and surgical hospital of 300 beds.

Equipped with the most modern scientific machinery, we have been able to offer the highest grade of professional care to 2312 veterans during our first eleven months of operation. Our present average daily census is 260 patients.

The medical care and treatment of veterans entails certain administrative procedures peculiar to the service. We definitely are appreciative of the tolerance of the local doctors in handling some of the procedures incident to the admission of veteran patients.

M. W. Gasper, M.D.
Manager

THE DIAGNOSTIC IMPORTANCE OF LIVER BIOPSY*

Francis A. Harkins, M. D.,
and
Richard J. Colfer, M. D.,
Wilmington, Del.

The numerous excellent reports originating from the various institutions where the needle biopsy of the liver has been given adequate trial as a medical procedure [1, 2, 3, 4, 5] encouraged us to adopt this method of obtaining liver tissue in all patients showing abnormal liver function tests and when hepatic involvement was probable or suspected. The material obtained in approximately 75 biopsies in the past year, without any evidence of ill effect or discomfort to the patient, has often proved an important diagnostic aid and, on occasion, has spared the patient a futile laparotomy or guided further therapy. We believe the procedure is a necessary adjunct to the battery of liver tests for the average general hospital, and it can be a safe and readily mastered technique by anyone who is interested in correlating structural and other histological abnormalities with clinical evidence of hepatic disease.

It is unfortunate that hepatomegaly has been considered a prerequisite for needle biopsy, since this has curtailed the popular adoption of this valuable method of examination. Hepatomegaly was infrequently encountered in our group of patients; therefore, we used the intercostal approach. [6, 7, 8] Also, since the major risk is bile peritonitis, we attempted to minimize injury to the larger bile channels by avoidance of deep penetration of the liver mass, especially in the jaundiced subjects.

The major group of patients examined fell into two categories: (1) those in which the liver might be considered primarily involved by reason of previous history of hepatitis or contact, chronic alcoholism, and the presence of jaundice; and, (2) those in which incidental liver involvement was suspected in the granulomatous, parasitic or neoplastic diseases. In many of the above the liver biopsy has often confirmed an otherwise tenuous diagnosis. We will review a group of representative case reports with the biopsy studies in each case. One must lean heavily on the cooperation of the pathologist, and Dr. Colfer will discuss pertinent microscopic pathologic findings.

---

*From the Departments of Medicine and Pathology, V. A. Hospital. Read before the Regional Meeting, American College of Physicians, Wilmington, Feb. 22, 1951.

Case Reports

Case 1. 29-year-old white male; chief complaints, pain in right hypochondrium and epigastric distress relieved partially by antacids; loss of 20 pounds in six months. Examination revealed palpable and tender liver; cephalin 3 plus; serum bilirubin 1.3 milligrams; gastro-intestinal x-ray negative. Liver biopsy showed degenerative cell changes and infiltration of round cells. Diagnosis: chronic hepatitis, post-infectious type. [10]

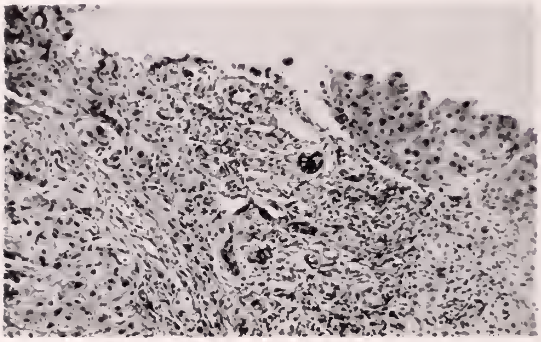


Fig. 1.—Case 3.

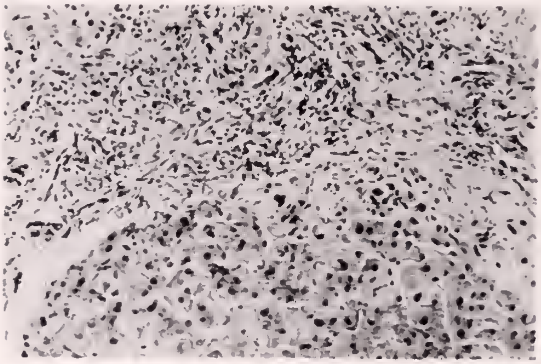


Fig. 2.—Case 7.

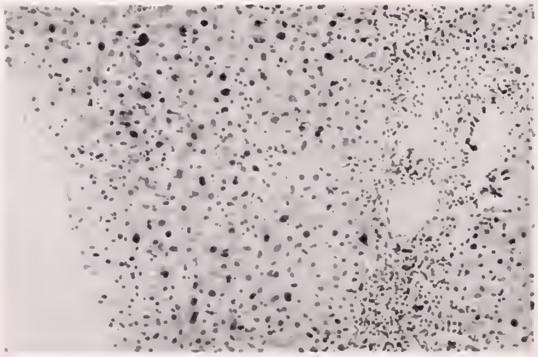


Fig. 3.—Case 8.

Case 2. 30-year-old negro male; chief complaint, abdominal cramplike pain in epigastrium and left abdomen, unrelated to food; fried food intolerance; no hepatitis or jaundice in past; functioning ectopic left kidney; gastro-intestinal x-ray showed multiple small intestinal areas of obstruction of mechanical type; liver palpable and tender; bromsulfalein 20 per cent; cephalin flocculation 3 plus; serum bilirubin 1.3. Liver biopsy showed vacuolization of cells and infiltration by round cells. Diagnosis: chronic hepatitis, post-infectious.

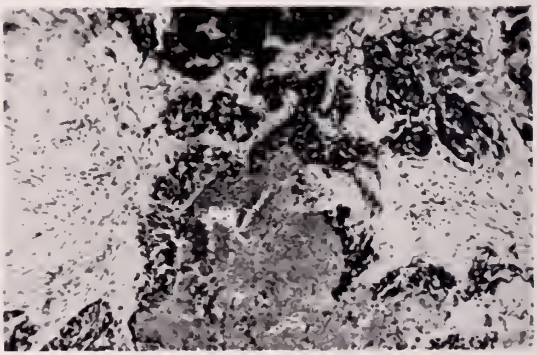


Fig. 4.—Case 10.

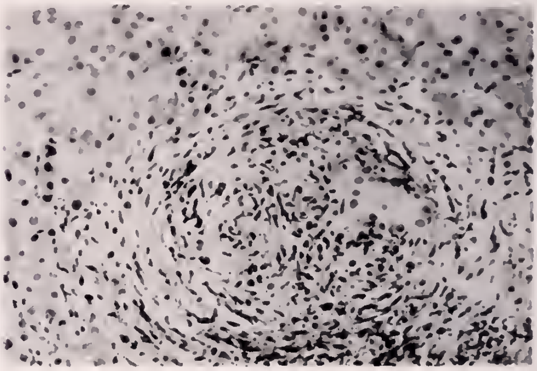


Fig. 5.—Case 12.

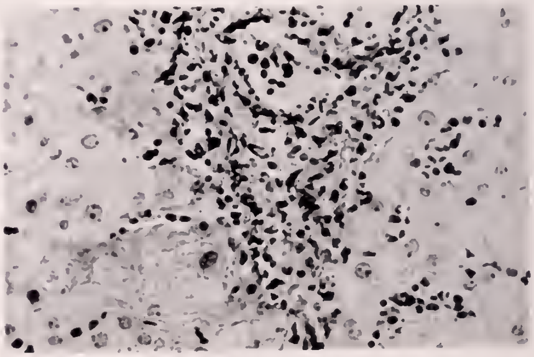


Fig. 6.—Case 13.

Case 3. 21-year-old white male; chief complaints, weight loss, poor appetite, weakness, fat intolerance; jaundiced in 1947; fever and chills in Germany; jaundiced last three months; hospitalized six months; serology was positive in August 1947, given penicillin treatment; given insulin 20 to 60 units daily and a 5,000-calorie diet for thirty days in

December 1948, for treatment of psychoneurosis. Examination: liver not palpable; bromsulfalein, 20 per cent retention; serium bilirubin, 0.7 milligrams; cephalin flocculation, 4 plus; thymol turbidity, 15 units; serology, negative; sedimentation rate, normal; gallbladder x-ray normal. Liver biopsy: (Fig. 1) advanced portal cirrhosis, no fat infiltration which is said to be present in alcoholic portal cirrhosis. Diagnosis: portal cirrhosis, post-hepatitis. This is not the nodular type of portal cirrhosis reported by Kunkel and Labby, [9] which we believe is merely a more rapidly progressive form of cirrhosis.

Case 4. 26-year-old white male; occupation, taxi driver; chief complaints feeling of suffocation and trembling, neurotic pattern; admits moderate use of alcohol. Examination, liver palpable and tender two fingers' breadth; bromsulfalein 12 per cent retention. Liver biopsy: portal cirrhosis with fatty infiltration characteristic of alcoholic cirrhosis.

Case 5. 33-year-old white male, confirmed alcoholic, three admissions with jaundice, ascites; bromsulfalein 40 per cent retention; large, nodular liver. Recovery from icterus and ascites on all occasions despite irreversible advanced fibrosis of liver and bromsulfalein retention which remained unimproved. Liver biopsy: portal cirrhosis, parenchymal fat infiltration.

Case 6. 29-year-old white male; chief complaints, productive cough, night sweats, jaundice, weight loss, history of excessive use of alcohol two years. This is presented merely to emphasize the extreme fatty infiltration induced by alcohol. Liver palpable and smooth to umbilicus. Advanced pulmonary tuberculosis present. Liver biopsy: marked fatty metamorphosis.

Case 7. 60-year-old white male; chief complaints, anorexia, jaundice, and some abdominal enlargement of two weeks. History of daily moderate alcohol ingestion for years. Occupation bank guard. Examination, liver three-finger enlargement; ascites moderate; marked icterus, 154 units; cephalin flocculation 4 plus; alkaline phosphatase 15 units; urine negative for urobilinogen; spider angiomata present on skin. Extreme jaundice suggested neoplastic obstruction. Liver biopsy (Fig. 2) showed intrahepatic character of obstruction bile stasis from fibrotic distortion, cell necrosis, fatty changes. Diagnosis, portal cirrhosis, alcoholic.

Case 8. 63-year-old white male; chief complaints, epigastric pain, nausea, jaundice two weeks' duration. Examination revealed jaundice, no liver enlargement. Icterus index 80 units; 4 plus bile in urine; negative urobilinogen. Obstructing neoplasm considered. Liver biopsy (Fig. 3) showed distention of bile channels and hydrohepatosis, bile pigment deposits; diagnosis, extra hepatic obstruction. Operative diagnosis, carcinoma of pancreas.

Case 9. 44-year-old white male known diabetic; chief complaints, cough, fever, weight loss. Examination revealed liver enlargement to umbilicus, pleural effusion, right chest; temperature 101 F., WBC 10,000 with normal differential. Impression was probably bronchiogenic carcinoma with liver metastasis. Liver biopsy showed nodules of hyperchromatic cells; diagnosis, metastatic adenocarcinoma. Expired; no autopsy.

Case 10. 50-year-old negro male; chief complaints, abdominal enlargement for one month, weakness and weight loss. Examination revealed massive grossly nodular liver, no ascites. X-ray studies of gastro-intestinal tract and gallbladder were not diagnostic. Icterus index 18 units; bromsulfalein 24 per cent; temperature 102 F. to 99 F. remittent type. Alcohol used in the past. Impression was portal cirrhosis, primary hepatoma. Liver biopsy (Fig. 4) showed cords of dark-staining cells with extreme fibrotic changes of liver. Diagnosis, metastatic carcinoma. Temperature subsided after forty days of teropterin. Expired after eight months; autopsy showed non-ulcerative, non-obstructing carcinoma of stomach with metastasis to liver.

A point to be noted in metastasis by portal circulation is the peripheral distribution in the liver; deep penetration by the needle may fail to obtain the desired results.

Case 11. 38-year-old negro male, with complaints of severe abdominal cramplike pain of six months' duration. Past history of pulmonary effusion; studies for tuberculosis negative; weight loss 17 pounds in six months; night sweats. Sent here from tuberculosis sanitarium with diagnosis of portal cirrhosis on basis of enlarged liver and history of alcohol ingestion. Liver palpable five fingers; proteins 7 Gm., A-G 3:1; cephalin flocculation 3 to 4 plus; thymol turbidity 15 units; blood chlorides 620; protein ranged from 8 to 10 Gm.; PPD 3 plus, first strength; segmental dilatation of small intestinal loops on previous hospitalization; sedimentation rate 60 millimeters in one hour. Liver biopsy showed focal areas of necrosis and epithelioid cells without giant cells. Impression: visceral tuberculosis; responded to streptomycin and PAS; biopsy six months later was normal; sedimentation rate was normal; there was a weight gain and patient was asymptomatic; intestines had a normal pattern. A-G ratio now reversed. Diagnosis, visceral tuberculosis.

Case 12. 30-year-old negro male; weight loss, cough, and eye complaints. Examination revealed persistent moist rales in the chest; basal congestion on X-ray; reversal of A-G protein ratio; residuals of uveitis; liver not palpable. Liver biopsy (Fig. 5) showed numerous granulomas, some with large giant cells. Diagnosis: sarcoid disease.

Case 13. 29-year-old negro male; chief complaints, joint pains, recurrent abdominal pain and vomiting, joint swelling, weight loss, night sweats, and fever. Examination revealed enlargement of the spleen, two fingers' breadth; had one brother and one sister with mild arthritis; positive serology and negative spinal fluid. X-rays of joints normal; PPD negative; sickle test positive. WBC 25,000 with left shift; electrocardiogram showed pericarditis. Impression, sickle cell anemia or leukemia, with arthritis. Immediate response to Cortisone. Liver biopsy (Fig. 6) showed diffuse infiltration, liver sinusoids, immature cells, red and white. Diagnosis: extra medullary hematopoiesis; sickle cell anemia.

Case 14. 55-year-old white male with 16-year history of duodenal ulcer; chief complaints, abdominal discomfort, transient episodes of vertigo, nausea and amnesia of epileptiform type. Considered to be purely emotional basis by neuropsychiatrist. X-ray confirms presence of obstructing chronic duodenal ulcer; operation refused; BSP 35 per cent retention. Liver biopsy showed multiple areas of focal necrosis, some areas of concentric epithelioid and fibroblastic cells resembling sarcoid granuloma without giant cells; no cirrhosis. Diagnosis: granuloma of liver, etiology undetermined.

Case 15. 24-year-old white male; chief complaints, epigastric distress and flatulence for five years. Examination revealed liver enlargement, one finger's breadth; skin, photosensitivity and dermatographia, retinitis pigmentosa. Gallbladder X-ray suggested calculi; on operation, no gallbladder disease. Liver biopsy showed hepatic cells vacuolated appearance, collections of giant cells in portal areas. Diagnosis: hepatic disease—granulomatous type—etiology undetermined.

SUMMARY AND CONCLUSIONS

1. The needle liver biopsy is a practical and safe procedure and deserves widespread adoption in the diagnosis of primary and secondary hepatic involvement.

2. The interested internist may readily familiarize himself with the technique of the intercostal approach inasmuch as hepatomegaly is not always a feature of liver involvement.

3. Fifteen representative cases from a series of 75 biopsies performed in the past year in an average general hospital illustrate pathology by needle biopsy of unquestioned diagnostic value.

REFERENCES

1. Kumpe, W. D.: Gall, E. A.; Schiff, L.; Mille, W. E.; Safdi, S. A.; Sternberg, H H: Needle Biopsy of the Liver, Gastroenterol, 9: 672, 1947.
8. Mallory, T. B.: The Pathology of Epidemic Hepatitis, J.A.M.A. 131: 21 (June) 1947.
3. Popper, H. and Franklin, M.: Diagnosis of Hepatitis by Histologic and Functional Laboratory Methods, J.A.M.A. 137: 15 (May) 1948.
4. Post, J.; Gillis, S.; Lindenauer, H. J.: Studies on the Sequelae of Acute Infectious Hepatitis, Ann Int. Med. 33: 1378 (Dec.) 1950.
5. Hoffman, J. and Rosenthal, J.: The Liver Biopsy: Analysis of Pathological Findings in 75 Cases, Ann. Int. Med. 33: 1203, 1950.
6. Tripoli, C. and Fader, D.: The Differential Diagnosis of Certain Diseases of the Liver by Means of Punch Biopsy, Am. J. Clin. Path. 11: 516 (June) 1941.
7. Iverson, P. and Roholm, K.: On Aspiration Biopsy of the Liver with Remarks on Its Diagnostic Significance, Acta Med. Scandinav. 102: 1, 1939.
8. Hoffbauer, F. W.: Needle Biopsy of the Liver, J.A.M.A. 131: 21 (June) 1947.
9. Kunkel, H. G. and Labby, D. H.: Chronic Liver Disease Following Infectious Hepatitis. II. Cirrhosis of the Liver, Ann. Int. Med. 3: 433 (March) 1950.
10. Havens, W. P., Jr.: Infectious Hepatitis, Medicine 27: 279, 1948.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion and policy of the Veterans Administration.

HEMINEPHRECTOMY FOR STAGHORN CALCULUS IN LOWER HALF OF DOUBLE KIDNEY*

Case Report

John H. Furlong, Jr., M. D.,
Wilmington, Del.

Although the frequency of pelvic and ureteral duplication varies in post-mortem studies from 1.23 per cent to 2.9 per cent, the incidence of pathologic complications due to the duplication is probably only 3 per cent to 7 per cent of that number. [1] A brief survey of the recent literature reveals that despite the emphasis on surgical conservation of renal tissue, relatively few cases of heminephrectomy performed on double kidneys have been reported. [2, 3, 4] The occurrence of another such case would therefore seem worthy of report.

Case Report

A 32-year-old white veteran entered the hospital on December 4, 1950, with complaints of intermittent aching pain low in the back. History of the present illness revealed that the patient had absolutely no genito-urinary symptoms until May 1945. As an infantryman in Germany, he was injured by shell fragments in February 1945, with resultant fracture of the right femur. He was placed in a double hip spica and did well until about two weeks after removal of the cast when he noted sweating, fever, and anorexia. Investigation revealed the presence of two small calculi in the lower third of the right ureter. Eight days later, after cystoscopic treatment, no ureteral calculi were seen by x-ray although there were some shadows of increased density in the left flank which suggested calcification of the cortex of the kidney. He was free of symptoms until 1948, when occasional burning on urination began. The next year he noted episodes of dull back pain located at the iliac crests and more marked on the right side. He also had two episodes of painless total hematuria. In late 1950, during a routine Veterans Administration examination for compensation purposes, abnormal urine findings led to an x-ray of the abdomen which showed stones in the left renal area, and hospitalization resulted.

Past medical history and system review added no information but episodes of jaundice and malaria in 1944.

Physical examination disclosed a well-developed white male, 5 feet 5 inches tall, and weighing 138 pounds. The temperature was 98 F., pulse 80, and blood pressure 110/70. The only positive findings consisted of slight mid-abdominal tenderness to the right of the midline and minimal tenderness to punch in the left flank. There was an asymptomatic muscle hernia on the right anterolateral thigh.

During the hospital stay, repeated urinalyses showed pH of 7.5, specific gravities from 1.005 to 1.015, albumin negative to 2 plus, sugar negative, WBC from few to 30 per HPF, triple phosphate crystals 10 to 15 per HPF. Other laboratory work included a BUN of 14, negative Kahn, WBC 11,700 with a normal differential count, RBC 5,960,000, hemoglobin 16 grams, total protein 8.8, albumin 6.1, and globulin 2.7. An x-ray of the abdomen showed a collection of densities varying from 6 cm. to 3 mm. in diameter located in the left renal area. Cystoscopy on December 8, 1950 revealed a mild cystitis with a small hemorrhagic area above a normal appearing left ureteral orifice. Ureteral catheters passed easily and intravenous PSP dye appeared from the right catheter in four minutes with 15 per cent of the dye recovered in the next ten minutes. Dye appeared from the left catheter in seven minutes and 4 per cent was recovered during the next ten minutes. Cultures revealed a streptomycin sensitive growth of E. coli from the left kidney and no growth from the right. Retrograde pyelograms (Fig. 1) revealed duplication of the pelvis and calyces on the right. The left kidney was considerably enlarged and a small pelvis and distorted calyces were visualized in the upper part. The large calculi were located in the lower part of the left kidney.

An intravenous urogram revealed contrast material excreted promptly by both kidneys and giving the same findings as in the retrograde pyelograms. No dye was noted in the lower half of the left kidney. A repeat cystoscopy showed that the previously noted hemorrhagic area above the left ureteral orifice represented a second orifice and catheters passed up the left ureters easily. Dye injected in the upper catheter diffused about the large calculus. Culture of urine from the lower half of the kidney was positive for streptomycin sensitive paracolon organisms.

---

*From the Department of Urology, V. A. Hospital.

Streptomycin was administered beginning on December 17, 1950, and the next day under endotracheal ether anesthesia the left renal fossa was exposed through a straight flank incision over the course of the twelfth rib. A portion of the rib was resected subperiosteally. The exposure was quite adequate and the kidney was completely mobilized by blunt dissection. The lower three-fifths of the kidneys was composed of thin shell of tissue through which the staghorn calculus was easily palpable. There was a sizable aberrant artery crossing the ureteropelvic junction with ureteral constriction in that area. A second aberrant artery entered the kidney just above the lower pelvis. The aberrant vessels and lower ureter were tied and cut. Dissection of the main renal artery and vein revealed no further extra renal vessels to the lower pole. The diseased portion of the kidney was excised with the scalpel, leaving a wedge-shaped defect extending into normal renal tissue. Bleeding was moderate but easily controlled with a continuous through and through hemostatic suture of plain "O" catgut. The renal edges were approximated with several mattress sutures of the same material. The remaining kidney tissue measured an estimated 7 by 6 by 5 cm. and was of normal consistency and color. A nephropexy was performed. A Penrose drain was left close to the kidney, and the wound closed in layers with interrupted chromic "O" sutures and silk in the skin.

During the two-hour procedure about 600 cc. of whole blood was given and the patient's color, pulse, respirations, and blood pressure remained steady. The anesthesiologist noted no respiratory difficulty on the patient's leaving the operating room. When seen one and one-half hours later, however, the patient was restless and slightly cyanotic. Physical examination revealed signs of an extensive left pneumothorax, which was confirmed by x-ray. Twenty-nine hundred cc. of air was aspirated from the left hemithorax with complete alleviation of symptoms and complete re-expansion of the lung as confirmed by a repeat x-ray. The patient was kept in bed for seven days postoperatively to maintain the nephropexy, and was ambulatory thereafter. He did well although the temperature became elevated to 100 F. to 101 F. in the afternoons until the tenth day (five days after

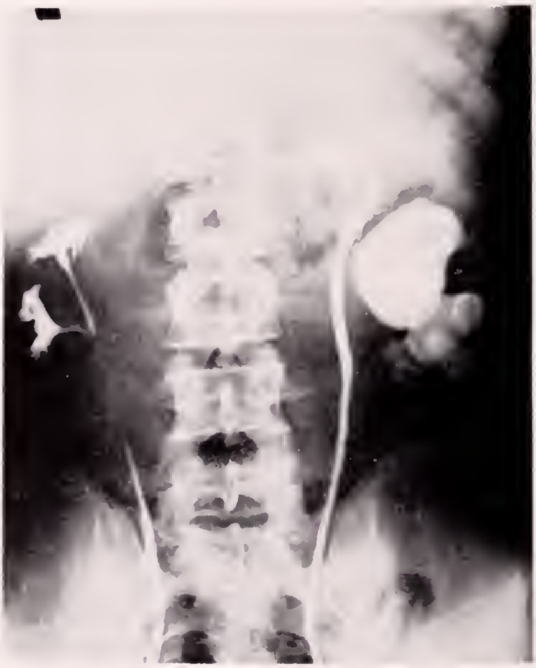


Fig. 1.—Before Operotion.

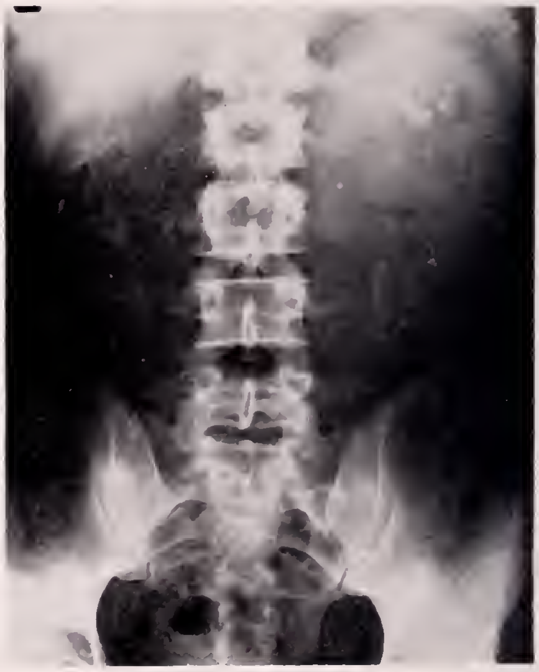


Fig. 2.—After Operotion.

the drain was removed). At that time an abscess containing about 30 cc. of malodorous pus evacuated spontaneously from the drain site. Culture of the pus showed an aureomycin sensitive growth of A. aerogenes and a urine culture the same day showed a few colonies of the same organism. The temperature remained normal thereafter and flank drainage diminished under aureomycin therapy and ceased by the thirtieth post-operative day.

An intravenous urogram done the ninth post-operative day (Fig. 2) revealed prompt function of the remaining portion of the left kidney with good position and drainage in the erect film.

Pathologic examination of the specimen (by R. J. Colfer, M. D.) is as follows:

The gross specimen consists of a sac-like structure and a staghorn calculus measuring 6 by 3 by 5 centimeters. The sac-like structure reveals no normal appearing kidney structure. One piece of tissue shows a small amount of cortex and medulla. Microscopic examination reveals that the pelvic epithelium is squamous in type and moderately cornified. In several areas it is still covered with a blue staining calcareous substance. Some glomeruli are hyalinized. Others show congested capillaries and thickened outer capsular layers. Many tubules are compressed into slits. Others are dilated and contain a pink fluid. The interstitial tissue shows scattered areas of scarring and focal infiltrations of lymphocytes, plasma cells, and eosinophiles. Diagnoses: (1) Hydronephrosis; (2) Nephrolithiasis; (3) Chronic pyelonephritis; and (4) Squamous metaplasia of pelvic epithelium.

Discussion

The case illustrates one type of opportunity for the application of surgery directed toward conservation of renal tissue. It is believed that the conservation of a relatively small (two-fifths) amount of left kidney tissue is justified in this case since the opposite kidney, although apparently normal at present, has previously been the site of stone formation. Should this stone formation recur on the non-operated side even a small amount of function on the other side would be most welcome.

Obviously a few weeks' follow-up is too short a time to enable one to predict the ultimate fate of the patient; however, the immediate postoperative presence of good function, drainage, and position of the remaining kidney segment make it seem likely that appreciable renal tissue will continue to function on the resected side. A prolonged follow-up regimen including urinalyses, urine cultures, and flat plate x-rays for the presence of new stones is contemplated at frequent intervals.

REFERENCES

1. Bell, E. T.: Renal Diseases, Lea & Febiger Co., Philadelphia, 1947.
2. Baker, W. J.: Conservative Surgery of the Upper Urinary Tract, J. Urol. 60: 197-215, 1948.
3. Munger, A. D.: A Plea for a More Conservative Attitude in Renal Surgery, J.A.M.A. 132: 675-679 (Nov.), 1946.
4. Hess, E.; Roth, R. B.; Kaminsky, A. F. and Swick, H. V.: Surgery for the Conservation of Renal Parenchyma, J. Urol. 64: 175-187, 1950.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion and policy of the Veterans Administration.

MELANOMA OF THE IRIS*

Case Report

Vance A. Funk, M. D.
Wilmington, Del.

Case history: A. C. was referred to us in February 1950 after a pigmented growth on the left iris was noted when he was taking a physical examination at Fort Meade, Md. He was a 31-year-old male with dark complexion and of Italian extraction. General health was excellent. Past history was noncontributory. There was no history of tumor in the family. General physical examination was essentially negative except for the left eye. Ocular tissues, other than the iris of the left eye, were normal. Anterior chamber was of normal depth; the pupil was free of adhesions and reacted normally to light and accommodation. (Fig. 1) A pigment spot was on the anterior surface of the temporal side between 3:00 and 4:00 o'clock at the ciliary border. The iris was brown. The lesion was dark brown, size 1.5 mm x 2 mm. Slit lamp: Lesion appeared as multiple dark brown whorls. Fundus oculi showed no evidence of naevus of the choroid. Tension was normal and vision was 20/15 O. U. with a minus 2.50 sphere O. U.

---

*From the Department of Ophthalmology, V. A. Hospital.

The patient was sent to a consultant in New York and to a consultant in Baltimore for an opinion. Opinion from one consultant was that the lesion was probably malignant and the eye should be removed. Opinion from the other consultant was that the lesion was probably benign and an iridectomy should be done.

Patient was admitted to the Veterans Administration Hospital, Wilmington, Delaware, on June 12, 1950. Since the time he was first seen, five months previously, there had been no noticeable increase in size of the lesion. On June 16, 1950, an iridectomy was performed under local anesthesia, by Dr. Norman L. Cutler. The conjunctiva was freed about 1/2 cm. to the temporal side of the limbus from 12:00 to 6:00 o'clock. After the corneoscleral junction was exposed, the anterior chamber was entered with a cataract knife and the tumor mass and attached iris presented in the wound. It was about 2 sq. mm. in size and was removed with the iris, to which it was attached, with scissors. At the time it was freed, the patient squeezed his eye and there was a small loss of vitreous. Iris pillars were reposed with a spatula and freed edges of the conjunctiva were sutured.

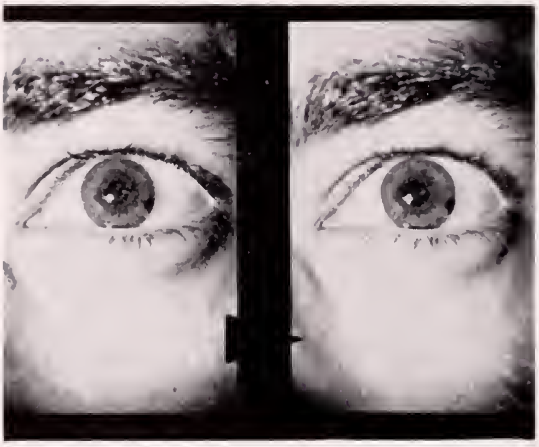


Fig. 1.

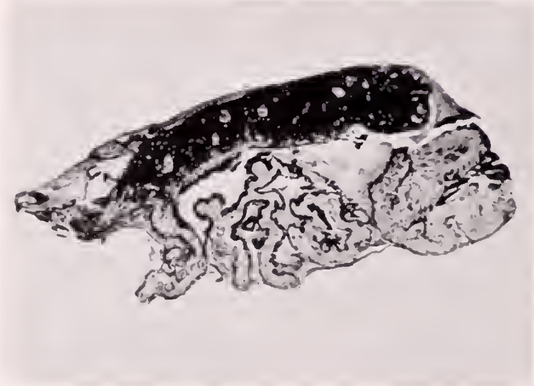


Fig. 2.

It was felt at the time that this tumor was showing signs of adherence to the overlying cornea although, when freed, it was not necessary to remove any portion of the cornea.

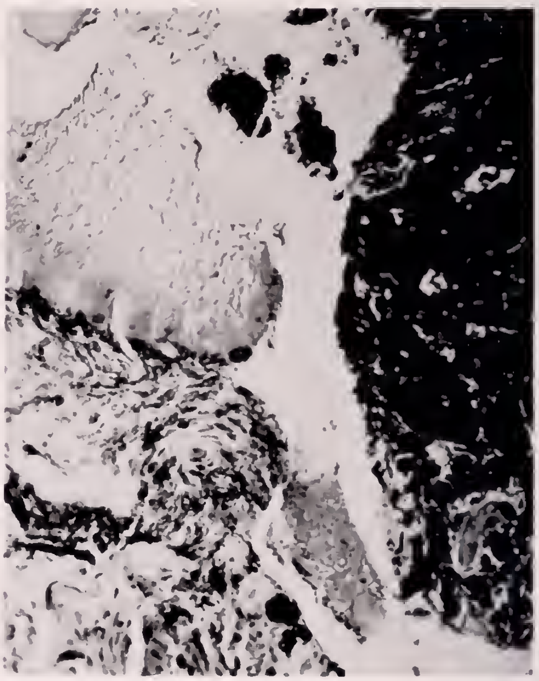


Fig. 3.

Pathological Report. (Figs. 2 and 3) Microscopic: Section is of the iris which contains a heavily pigmented growth. The tumor extends from anterior surface both laterally and posteriorly where it closely approaches but does not encroach upon the posterior pigment epithelium. The cells composing the growth are so closely packed and heavily pigmented that it is impossible to see cellular detail. The less heavily pigmented cells on the periphery of the tumor show no evidence of the iris. Impression: benign melanoma of the iris.

The microscopic slides were sent to the consultants above who had examined the patient before operation. Each held to his original opinion, one believing that this was a benign melanoma and the other that it was malignant.

Six months following operation, there has been no evidence of local growth or metastasis. Vision two months following operation was O.D. with — 2.50 sph. = 20/15. O.S. with — 2.50 sph./ — 3.25 cyl. axis 168 = 20/20 — 2.

Melanomata of the iris are believed by many to be of ectodermal and neural in origin rather than mesodermal. They are believed to arise from proliferation of the cells of the sheath of Schwam. [1] The neuro-ectodermal tumors are: 1. Neurofibroma. 2. Naevus. 3. Malignant melanoma.

1. Neurofibroma
   - (a) Neurofibroma of the choroid is rare and is usually associated with von Recklinghauses' disease elsewhere. The iris is usually unaffected but occasionally has been involved. Histologically, there is increase in thickness occupied by dense, higly nucleated fibrous-like tissue arranged in layers, the cells of which it is composed are difficult to distinguish from fibroblasts, but they are probably proliferated cells of Schwam. There are quantities of greatly thickened non-medulated nerve fibers forming a dense honey-combed mesh work, numerous foci of ganglion cells and large areas of spindle-shaped cells containing pigment. Scattered throughout are oval laminated structures arranged in whorls with laterally arranged nuclei.
   - (b) Discrete Neurofibromata. Solitary and encapsuled tumors arising from nerve sheaths.
2. Naevus.
   - Type 1. Melanomata may occur in the iris by proliferation of the ectodermal epithelium, posterior layer.
   - Type 2. Occurrence is not uncommon, especially in blue and grey irides, wherein the tumor is situated in the stroma. Such naevi are congenital. Their usual habit is to grow very slowly in earlier years of life whereupon they enter in a period of indefinite quiescence, sometimes ultimately to undergo atrophy. They may occur with multiple naevi of the skin, occasionally they may begin to grow and the question of malignancy arises. Naevi of the uveal tract consist of enlarged plump chromatophores whose nuclei are not so large as that of a sarcoma cell. Pigment may vary in degrees.

   Small benign melanomas or pigment freckles of the iris are found in some cases of malignant melanoma of the choroid. [2] Whether the growths are true tumors or whether they are malformities that may become neoplastic, is still an open question. Reese regarded such growths as benign tumors.

   H. C. Wilder [3] presented two cases of benign melanoma of the iris. In two cases, a pigmented lesion had been observed for 15 years and iridectomy was performed because of recent active growth. The tumors extended from the anterior surface deep into the posterior portion of the iris, and by slit lamp examination, as well as unbleached sections, had the appearance of possible malignancy. However, in bleached sections, the sparce cellularity of the tumors indicated their benign character, and the eyes were not enucleated.
3. Malignant Melanoma.

   Malignant Melanoma of the iris is rare. It arises most commonly in the anterior layer and usually appears as a brownish circumscribed elevation on the surface. Pure spindle celled forms occur, but most commonly mixed types with polygonal, short spindles or round cells are found. Callender [4, 5] classified malignant melanomas based on cell types as Spindle cell, subtype A; Spindle Cell, subtype B; Fascicular; Mixed cell type, too necrotic to classify; and Epitheloid. The nevoid type of cell [3] and the nest-like arrangement characteristic of skin nevi is often seen in malignant melanomas of the iris; although, it is rarely encountered in those of the choroid and it does not fall into Callender's classification. Malignant melanomas grow at first

> very slowly, later more rapidly and eventually fill the anterior chamber. There are the typical four stages, and metastases are common. The four stages are: (1.) quiescent; (2.) glaucomatous; (3.) extraocular extension; (4.) metastases.

Treatment. In malignant melanoma of the iris there are the usual opposing opinions, some in favor of removal of the growth by wide iridectomy; others strongly recommending enucleation of the eye.[6] An iridectomy can be performed on a lesion that is thought to be malignant only if it is small, well defined, situated at or near the pupillary margin of the iris, and is not encroaching on the ciliary border of the tissue. If the lesion cannot be completely removed by iridectomy, enucleation should be performed. In cases of iridectomy where removal was incomplete, the trauma served as a stimulus for more rapid growth of the tumor. If the lesion was thought to be benign and postoperatively found malignant on pathological report, most feel that the eye should be enucleated. Others feel that if the iridectomy was wide enough and there was no evidence of tumor in the periphery of the specimen, no further operation is immediately necessary but the patient should be kept under frequent supervision.

Summary

A case of melanoma of the iris is presented emphasizing the difficulty in some cases to distinguish between the benign and malignant type. A difference of opinion exists as to how these lesions should be treated.

REFERENCES

1. Duke-Elder, W. S.: Textbook of Ophthalmology Vol. III. Tumors of Uveal Tract. 2446-2536, 1941.
2. Reese, A. B.: Pigment Freckles of the Iris (benign Melanoma), Their Significance in Relation to Malignant Melanoma of the Uvea,. Am. J. Ophth. 27: 217-226, 1944.
3. Wilder, H. C.—Intra-ocular Tumors in Soldiers, World War II. The Military Surgeon Nov. 1946, Page 459-490.
4. Callendar, G. R.: Malignant Melanotic Tumors of the Eye; a Study of Histologic Type in 111 cases, Tr. Am. Acad. Ophth., 131-142, 1931.
5. Wilder, H. C., and Callender, G. R.: Malignant Melanoma of the Choroid; Further Studies in Prognosis by Histologic Type and Fiber Content, Am. J. Ophth. 22: 851-855, 1939.
6. Neame, Humphrey: Two Cases of Malignant Melanoma of the Iris, Trans. Ophthal. Soc. United Kingdom, Vol. LXII, 1942.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the resul of his own study and do not necessarily reflect the opinion and policy of the Veterans Administration.

PORPHYRIA*

Ralph M. Myerson, M. D.,
Wilmington, Del.

The disorders of porphyrin metabolism constitute an interesting but little understood group of diseases. Although considered rare and a medical curiosity, porphyria has been reported with increasing incidence and appears to occur more frequently than is generally appreciated. It is the purpose of this paper to report three cases of pophyria seen in the last 18 months and to review the chemistry and metabolism of the porphyrins.

The porphyrins are pigments which form the basis of important compounds found throughout the plant and animal kingdoms. These compounds include hemoglobin, myoglobin, catalase, cytochrome and chlorophyll.

The porphyrin nucleus (Fig. 1) is composed of four pyrrhole nuclei joined together in a ring by methene linkages. There are eight replaceable hydrogen atoms in the nucleus. The properties of the individual porphyrin compound depend upon the presence of various substitution groups for these hydrogen atoms.

Table 1. Classification of the Diseases of Porphyrin Metabolism

A. Primary
   1. Congenital (uro. I and copro. I)
   2. Acute or "toxic" (uro. III, also uro. I and copro. III)
   3. Chronic or latent (uro. III, also uro. I and copro. III)
B. Secondary or symptomatic

Figure 2 illustrates the structural formula of protoporphyrin, the porphyrin of the blood This compound is capable of combining with iron to form heme. Hemoglobin, therefore, is protoporphyrin plus iron plus a globin compound.

The structural formulae of uroporphyrin and coproporphyrin are shown in Fig. 3**. It will be seen that, depending on the positions of the substitution groups, there are four isomers of each compound theoretically possible. Actually only two of these isomers, designated as I and III are found to exist in nature.

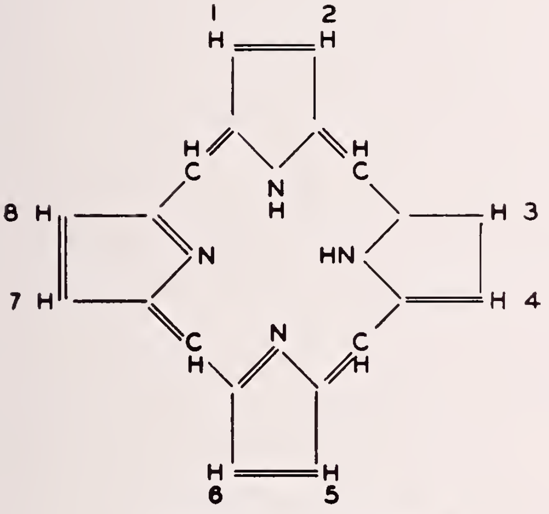
---

*From the Department of Medicine, V. A. Hospital, read before the Regional Meeting, American College of Physicians, Wilmington, Feb. 22, 1951.

**Copied from Welcker, N. L.: Protoporphyrin, New England J. Med., Jan. 4, 1945, with permission of the author and the New England Journal of Medicine.

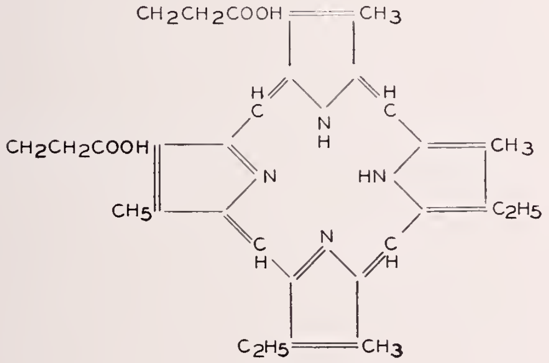
Coproporphyrins I and III occur normally in small amounts in the urine and feces. The presence of uroporphyrin is considered pathological.

Under certain conditions, the circumstances of which are unknown, an overproduction of uroporphyrin and/or coproporphyrin occurs, resulting in the condition known as porphyria.



PORPHYRIN NUCLEUS

Fig. 1.



PROTOPORPHYRIN

Fig. 2.

The relationship of protoporphyrin to porphyria is obscure. It would be convenient to assume that increased coproporphyrin and uroporphyrin results from a pathological degradation of protoporphyrin, but this is not the case. There is no apparent disturbance of protoporphyrin metabolism in porphyria.

Several different classifications of porphyria have been proposed. Table 1 shows the generally accepted classification.

The porphyrias cannot be satisfactorily classified according to the type of porphyrin excreted since many inconsistencies have been found.

Congenital porphyria is the rarest form of the disease. Turner and Obermayer[1] found record of 86 cases prior to 1936, and there have been but few additional cases reported since. It is believed to be transmitted as a mendelian recessive characteristic. The disease develops during fetal life and symptoms are usually present at birth or appear during childhood. Salient features of this disease are the excretion of burgundy red urine, a reddish discoloration of the teeth and bones, and photosensitivity of the skin and mucous mem-

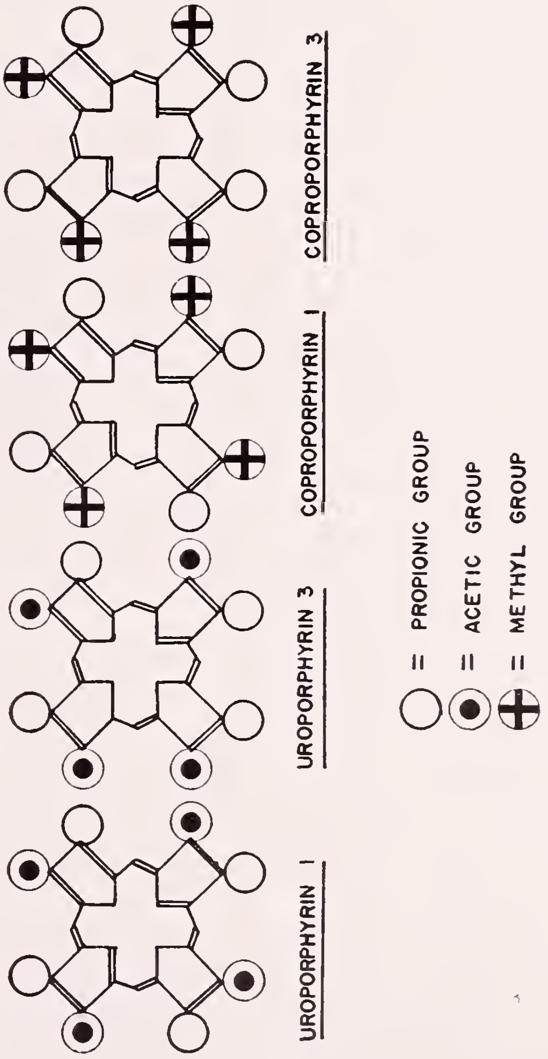


Fig. 3.

branes. Exposure to bright sunlight leads to a diffuse hyperemia of the skin followed by a vesicular or bullous eruption. Chronic indolent ulcers with disfiguring scars may occur and there may be hepatosplenomegaly. In this condition uroporphyrin I and coproporphyrin I are excreted.

Acute porphyria is in most cases an acute exacerbation of a chronic condition which is latent and asymptomatic between attacks and detectable only by special studies on the urine. Less commonly, acute porphyria has occurred and the porphyrins have disappeared or reached normal values during a remission[2]

Little is known concerning the factors which may precipitate the manifest syndrome of porphyria. In certain cases acute porphyria has been preceded by the ingestion of certain drugs, chiefly barbiturates and sulfonamides. This led to the separation of so-called acute idiopathic from supposed acute "toxic" cases. Actually this separation is unnecessary and unwarranted since the two types cannot be differentiated clinically.

The symptoms of acute porphyria appear in later life, usually in the third or fourth decades and the disease is said to affect women three times as commonly as men. The patients frequently give a history of an assortment of ill-defined complaints including bizarre pains in the extremities, vague ill-defined abdominal pain, nervousness, weakness, insomnia and depression.

The acute episode is characterized chiefly by gastro-intestinal and central nervous system symptoms. Abdominal pain is outstanding. It is usually severe, colicky, generalized or localized and associated with nausea, vomiting, constipation, fever and leucocytosis. On examination of the abdomen, there is usually no rigidity or rebound phenomenon and tenderness is not as marked as one might expect from the symptoms.

Hypertension may be present and transient electrocardiographic changes have been described. Gastro-intestinal x-rays may show dilatation of the small and large bowel.

Central nervous system symptoms vary from parasthesias and vague neuritic pains to paralyses, convulsions, and coma. An ascending type of paralysis is very common and respiratory failure is a frequent cause of death. The Guillain-Barre syndrome may be differentiated from the neurological manifestations of porphyria by the spinal fluid protein which is normal in porphyria. The mental disturbances may resemble a toxic psychosis, hysteria, or a manic depressive type of psychosis.

The urine in porphyria is usually red, but not invariably so, for the pigment is occasionally entirely excreted in the form of porphobilinogen which is colorless.

The prognosis of acute porphyria during an exacerbation should be extremely guarded. The mortality is said to be 80 to 90 per cent in those who have neurological symptoms. Of 100 patients reported by Waldenstrom. [3] 20 died within one year following the appearance of the disease clinically.

At autopsy the liver frequently shows accumulation of a yellow, non-iron containing pigment in the Kupffer cells and at times in the parenchymal cells. Areas of focal necrosis have been described. Degeneration of nerve cells of the brain and areas of focal necrosis have been noted. Peripheral nerves may show degenerative changes. The gastro-intestinal and vascular symptoms are usually attributed to the effect of porphyrins on smooth muscle.

A secondary increase in the excretion of porphyrins has been noted in many diseases. As long ago as 1887 Huppert reported an increase in porphyrin excretion in fever. [4] Porphyrinuria and symptoms resembling those of acute porphyria have also occurred in aplastic anemia, xeroderma pigmentosa, hemolytic anemias, hepatic diseases and as the result of poisoning by lead, phosphorus, cincophen, trinitrotoluene, arsphenamine and sulfonamides. Excretion of coproporphyrin I predominates in hepatic and hemolytic disease and of coproporphyrin III in the others. Porphobilinogen, but not uroporphyrin, is also found in the urine of patients with symptomatic or secondary porphyria.

The diagnosis of porphyria is confirmed by the finding of excess porphyrins or porphobilinogen in the urine. This may be done spectroscopically or by quantitative chemical determinations, but these methods are usually unavailable.

Watson and Schwartz have devised a simple test for the detection of porphobilinogen. [5] The urine of patients with acute porphyria has long been known to give a strong reaction to Ehrlich's aldehyde reagent. This is due to an excess of porphobilinogen rather than urobilinogen. The two may be differentiated by the fact that porphobilinogen is much less soluble in organic solvents. Equal parts of urine and Ehrlich's reagent are mixed in a test tube and an equal volume of a saturated aqueous solution of sodium acetate is added. A few cubic centimeters of chloroform are then added and the solution thoroughly mixed. The aldehyde compound of porphobilinogen remains in the aqueous portion while that of the urobilinogen is completely extracted by the chloroform.

The presence of porphobilinogen in the urine can be regarded as pathognomonic of porphyria. Hammond and Welcker found no false reactions in 1,000 control tests.[6]

There is no known specific therapy for porphyria. Its recognition, however, is important to prevent the patient from unnecessary surgery or psychotherapy and so that factors which may precipitate attacks can be avoided.

A number of drugs, chiefly barbiturates and sulfonamides, which have been incriminated as precipitating agents, should be avoided. Exposure to acute infections should be minimized, if possible, since infections may precipitate an attack.

Sedation is helpful in the treatment of the acute episode. Proper maintenance of fluid and electrolyte balance is essential. Atropine, nicotine acid, prostigmine, and calcium have been advocated but not generally accepted as beneficial.

The use of a respirator may be lifesaving in the event of respiratory failure. Antibiotic therapy is helpful as prophylactic therapy in such cases.

The patient should be made aware of the nature of his condition so that recognition of acute attacks will be prompt.

The clinical records of the three cases mentioned will now be given.

Case 1. C. L., a 40-year-old white male was admitted to the hospital on June 6, 1949 with a four-year history of chronic amebic dysentery which had proved refractory to repeated courses of emetine, carbarsone, and diiodoquin. There was no known hepatic involvement. The past and family histories were essentially negative.

On June 22, 1949, chloroquine was started in doses of ½ gram four times a day. Following the second dose, the patient developed severe abdominal pain, nausea, vomiting, fever of 101.2° and mental depression. Physical examination at this time was unrevealing. Despite the fact that abdominal pain was described as severe, the abdomen was soft to palpation and only tenderness in the left lower quadrant could be elicited. The white blood count was 39,400 with 94 per cent polymorphonuclear leucocytes. A flat abdominal x-ray showed no abnormalities of significance. An electrocardiogram showed lowering of the T wave in lead 1 as compared with a tracing taken two weeks earlier.

A surgical consultation was requested, but typical Burgundy red discoloration was noted to develop when the patient's urine was allowed to stand and the Watson-Schwartz test was markedly positive for porphobilinogen. Chloroquine was discontinued and there was subsidence of all signs and symptoms within 72 hours and porphobilinogen disappeared from the urine. However, urine samples tested quantitatively by chemical methods showed excesses of uroporphyrin and coproporphyrin several months after the acute episode subsided.

This case is considered to be an example of chronic latent porphyria with an acute exacerbation. The role of chloroquine in precipitating the attack must remain problematical. This drug has not been incriminated as producing porphyria either in animal experiments [7, 8] or in volunteers in which it was used as an antimalarial drug. [9]

The patient has been asymptomatic subsequent to this attack. His amebiasis responded well to aureomycin.

Case 2. J. C., a 49-year-old white male, has been a frequent admission to this and other hospitals over a period of 16 years with complaints of girdling abdominal pain and lancinating pains in the lower extremities associated with paresthesias. These symptoms occurred periodically in acute episodes and at times were accompanied by severe psychotic behaviour in the form of delusions, hallucinations, and manic states. On several occasions, he had been admitted to psychiatric institutions.

Shortly after the development of his symptoms, cerebrospinal fluid examination had revealed a positive Wassermann. Although subsequent examinations have been negative, he has received a variety of antiluetic therapy including bismuth, arsphenamine, tryparsamide, malaria and penicillin. His course has also been complicated by the fact that he has a duodenal ulcer and during one episode of abdominal pain he was subjected to an exploratory laparotomy. The family history was not remarkable.

On August 28, 1950, the patient noticed the sudden onset of pain in his left shoulder followed by paralysis of that extremity, abdominal pain, nausea, vomiting and occipital headache. Physical examination on admission revealed marked weakness of the left arm and hand with an increase in the deep tendon reflexes on that side. There was generalized abdominal tenderness but no spasm. The blood pressure was 110/80; temperature, pulse and respirations normal. Routine laboratory studies including examination of the spinal fluid were all within normal limits. However, urinalyses for porphobilinogen were positive on August 28, 1950, the day of admission, and September 1, 1950. Subsequent tests and quantitative determinations for porphyrins in the urine were negative.

For several days the patient was in a marked paranoid state, hallucinating and manifesting delusions of persecution and suicidal tendencies. With the disappearance of porphobilinogen from the urine, there was improvement in his symptomatology. His monoplegia has slowly improved on physiotherapy.

This case falls into the group of acute porphyria in which no abnormality in porphyrin metabolism can be demonstrated between acute relapses. In retrospect it appears probable that the patient's attacks of abdominal pain, paresthesias and mental aberrations during the past 16 years can be attributed to repeated attacks of acute porphyria rather than central nervous system syphilis.

Case 3. A. L., a 56-year-old white male was admitted to the hospital on June 28, 1950, with a three-month history of bizarre abdominal pain and generalized shooting pains involving practically his entire body. These had been accompanied by progressive weight loss, weakness, nervousness and marked mental depression. The past and family histories were noncontributory.

Physical examination revealed generalized brownish pigmentation of the skin. The liver was palpable 10 cm. below the right costal margin. Examination of the heart and lungs was within normal limits. The blood pressure was 140/80. Pitting edema of the ankles and feet was present. The patient was markedly depressed and cried frequently during the course of the examination. Laboratory studies revealed a moderate degree of normochronic anemia and 12 per cent bromsulfalein dye retention after 45 minutes. Other laboratory studies were essentially normal except that repeated urinalyses were positive for porphobilinogen. Quantitative studies revealed a threefold increase in the excretion of coproporphyrin III. No uroporphyrin was present.

The patient's course was steadily downhill. He continued to complain of severe abdominal and generalized muscular pains, and severe atrophy of the proximal muscle groups of the upper and lower extremities developed. Mental depression was severe and ideas of suicide were expressed. Serial x-rays of the chest revealed a gradual widening of the mediastinal shadow. Death occurred approximately two months after admission. A course of ACTH had no influence on his underlying process or the excretion of coproporphyrin. Post-mortem examination revealed an "oat-cell" carcinoma of the right lung with widespread metastases to lymph nodes, liver, spleen, pancreas and adrenals.

This case is thought to represent an example of symptomatic porphyria secondary to neoplastic disease with liver metastases. Many of the patient's complaints and clinical findings are thought to have been on the basis of porphyria rather than his underlying disease.

Conclusions

Although considered a rare disease and a medical curiosity, porphyria occurs more commonly than is generally appreciated and should be considered in the differential diagnosis of any case of unusual abdominal complaints or symptoms referable to the central nervous system or when bizarre combinations of the two occur.

A brief review of the chemistry and metabolism of the porphyrins and a classification of the porphyrias with their clinical findings have been presented.

Three cases of porphyria seen in the past 18 months have been reported.

The author is indebted to Cecil J. Watson, M.D., University of Minnesota School of Medicine, for his interest and help with the cases reported and for his kindness in doing the quantitative determinations of urinary porphyrins.

REFERENCES

1. Turner, W. J. and Obermayer, M. E.: Studies on Porphyria, Arch. Dermat. & Syph. 37: 549 (April) 1938.
2. Watson, C. J.: Personal communication.
3. Waldenstrom, M. and Vahlquist, B.: Studies on the Excretion of Porphyrobilinogen in Patients with So-Called Acute Porphyria, Acta med. Scandinav. 117: 1, 1944.
4. Huppert. Quoted by Carrie, C.: Die Bedeutung der Porphyrine fur die Bleiintoxication, Med. Welt. 10: 109 (Jan.) 1936.
5. Watson, C. J. and Schwarta, S.: A Simple Test for Urinary Porphobilinogen, Proc. Soc. Exper. Biol. & Med. 47: 393 (June) 1941.
6. Hammond, R. L. and Welcker, M. L.: Porphobilinogen Tests on 1,000 Miscellaneous Patients in A Search for False Positive Reactions, J. Lab. & Clin. Med. 33: 1254, 1948.
7. Fitzhugh, O. G., Nelson, A. A. and Holland, O. L.: The Chronic Oral Toxicity of Chloroquine, J. Pharmacol. and Exper. Therap. 93: 147 (June) 1948.
8. Nelson, A. A. and Fitzhugh, O. G.: Chloroquine, Arch. Path. 45: 454, (April) 1948.
9. Alving, A. A. et al.: Studies on the Chronic Toxicity of Chloroquine, J. Clin. Invest. 27: 60 (May) 1948.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion and policy of the Veterans Administration.

RECENT ADVANCES IN THE DIAGNOSIS OF CORONARY ARTERY DISEASE*

A. Henry Clagett, Jr., M. D.,
Wilmington, Del.

Disease of the coronary arteries is, without question, the most important of all diseases of the heart both from the standpoint of incidence and seriousness. Heart disease, in general, ranks as the number one cause of death in the United States. There are over three times as many deaths due to heart disease as due to cancer, the second most common cause of death. Furthermore, it has been estimated that there are about 4,000,000 persons in the United States at present who have heart disease. [1] In view of this, it can be seen at once the great importance of accurate and early diagnosis of disease of the coronary arteries.

The clinical diagnosis of myocardial infarction, first described by Herrick,[2] has advanced tremendously in the past ten years, due mainly to the increased use of multiple precordial leads in the electrocardiogram. While of utmost importance, these advances are a matter of common knowledge and will not be discussed at this time. It is my aim today to discuss the recent advances in the diagnosis of coronary insufficiency, a condition more commonly referred to as angina pectoris.

Coronary insufficiency is used by most observers synonymously with the clinical syndrome of angina pectoris, first described in 1772 by William Heberden. [3] The fact that today Heberden's paper remains the best description of this condition proves it to be a classic. Until relatively recently, the diagnosis of coronary insufficiency was made entirely on the subjective story of the patient, there being no objective findings to substantiate this diagnosis.

While coronary insufficiency is seen in patients who have other types of heart disease such as old myocardial infarction or ventricular hypertrophy, it not infrequently occurs in patients whose entire physical examination and electrocardiogram are normal. If, by chance, an electrocardiogram is taken during an attack of pain, it will probably show depression of the ST segments or even inversion of the T waves. These changes are found to be transitory and the tracing usually returns to normal within very few minutes. For this reason, electrocardiographic changes during an attack of coronary insufficiency are seen very infrequently. At times, physicians have attempted to bring on an attack of coronary insufficiency by having the patient exercise. They then took an electrocardiogram while the patient was having an attack of induced coronary insufficiency. This practice has generally been discontinued because of its danger.

---

*From the Department of Medicine, V. A. Hospital. Read before the Regional Meeting, American College of Physicians, Wilmington, Feb. 22, 1951.

In 1941 Master and his associates [4, 5] published a new test, now known as the Master two-step exercise test for the diagnosis of coronary insufficiency. This test is based upon the electrocardiographic changes following a standardized amount of exercise. Several years previous to this Levy and his group [6] had published results on an anoxemia test for the diagnosis of coronary insufficiency. This test is based upon the production of coronary insufficiency by means of inhalation of a limited amount of oxygen. These tests will be considered in detail.

In performing the Master two-step exercise test the patient is given a standardized amount of exercise to perform in a definite amount of time (one and one-half minutes), this amount being based upon the patient's age, weight, and sex. The exercise is performed by having the patient take a certain number of trips over two steps, each step being nine inches in height. This gives a standard amount of exercise. Before commencing the exercise the patient is allowed to rest and attain as near basal conditions as feasible. The test is not performed immediately following a meal and the patient should not smoke immediately preceding the test. After the rest period a resting electrocardiogram is taken. It is of utmost importance that this tracing be seen by the physician in charge of the test before proceeding with the exercise since the test is definitely contraindicated in the presence of an abnormal electrocardiogram. For this reason, and for another reason to be mentioned later, a direct writing type of electrocardiograph machine is desirable in performing both the exercise and the anoxemia tests. Its value in this instance is obvious since it obviates the necessity of processing a photographic record in order to read the pre-exercise tracing. Despite the number of trips prescribed for the individual patient, the test is concluded immediately if the patient complains of precordial pain. Upon completion of the exercise it is imperative to obtain an electrocardiographic tracing without delay. For this reason, it is desirable to use a vacuum tube type machine rather than a string galvanometer because a complete tracing can be taken within a very short period of time with the former type machine.* Different authors have their own regimen for taking post-exercise tracings. We take tracings immediately and again six minutes following the cessation of exercise. For the routine exercise test, leads 1, 2, 3, and V4 are used. A positive exercise test is evidenced by any one of the following conditions: (1) depression of the ST segment of 0.5 millimeters or more in any lead; (2) inversion of a normally upright T wave in any lead except lead 3; (3) onset of a cardiac arrhythmia following exercise; (4) onset of bizarre complexes, bundle branch block, or other abnormal configuration following exercise.

It has been stressed by Master and other authors that a negative exercise test does not rule out coronary artery disease. If a negative test has been obtained, a so-called double Master two-step exercise test may be performed on some subsequent date. This consists in giving double the prescribed number of trips in double the time. Master feels that a negative double exercise test is good evidence against the presence of organic coronary artery disease.

The interpretation of a positive exercise test, on the other hand, is subject to much greater controversy. While in the beginning it was felt that a positive test was evidence of coronary insufficiency, there is at present a large group of competent workers exemplified by Wendkos [7] and recently joined by Master himself, [8] who feel that not all cases with positive exercises tests necessarily have organic coronary insufficiency. Some workers feel that the patients all have coronary insufficiency but that some are upon a nonorganic basis; others feel that some have coronary insufficiency and some do not. A test that has recently been gaining in popularity is the use of the exercise test in combination with ergotamine tartrate. Master, [8] and others, feel that if a patient has a positive exercise test, the test should be repeated after the patient has received a dose of ergotamine tartrate. (The use of ergotamine tartrate has been discontinued due to severe side reactions and the danger of the drug, particularly where coronary insufficiency is suspected. Those workers who formerly used this drug are now using a drug named DHO-180, Dihydroergocornine, which supposedly has a similar effect to the ergotamine tartrate but which is supposedly less toxic.) While much excellent basic work regarding the effect of ergotamine tartrate on the T wave has been performed in the past, I personally feel that there is insufficient evidence at present to apply these findings clinically to the exercise test. In Master's most recent article concerning the use of ergotamine tartrate in conjunction with the exercise test, [8] ten patients were selected, all of whom had positive exercise tests. On what appears to be an arbitrary basis, five of these patients were said to be severe neurotics while the other five were said to have coronary artery disease. The exercise test was repeated after the use of ergotamine tartrate following which the five psychoneurotics had negative exercise tests while the five patients with coronary artery disease continued to show a positive response.

---

*The machine used in this laboratory for all exercise tests is the Sanborn Viso-Cardiette.

On the other hand, some workers use an exercise test much more strenuous than Master's, the patients continuing exercise until one of the following happens: (1) onset of precordial pain; (2) fatigue; or (3) completion of 100 trips. The proponents of this test favor it because the changes, when present, are more gross and do not necessitate any quantitative measurements, and that, in their opinion, a positive response is definite evidence of coronary artery disease. Many of the changes so obtained are very suggestive of ventricular strain patterns.

The general indications and contraindications are the same for the anoxemia as for the exercise test. The test is performed under near-basal conditions. After a resting tracing has been taken and is found to be normal, the patient is allowed to inhale a mixture of 10 per cent oxygen and 90 per cent nitrogen. This is kept up for a period of 20 minutes or until the patient complains of precordial pain. Electrocardiograms are taken at least every five minutes during the test. The test is discontinued immediately upon the onset of pain or upon the onset of electrocardiographic changes. For this reason it is again advisable to use a direct writer electrocardiographic machine. Proponents of this test prefer it because, upon the onset of electrocardiographic changes or precordial pain, the patient can immediately be given 100 per cent oxygen. Recent experimental work seems to point that the test will be much more standardized if and when it can be performed while the patient's blood oxygen tension is being followed. At present this cannot be adapted for general clinical use. Proponents of the exercise test point out that the exercise is a perfectly normal every-day action of the patient and does not subject the patient to the psychic factors inherent to the anoxemia test in which the patient's face is covered by a tightly fitting mask and much unusual apparatus is present in the room. Except for a few minor variations, the results of the anoxemia test are quite similar to those of the exercise test.

It is obvious that the tests for the demonstration of coronary artery diseases are few, and far from 100 per cent perfect. It is therefore necessary to obtain any evidence possible pointing toward the presence of coronary artery disease, even circumstantial evidence. This brings us to the borderline of the long-argued question of arteriosclerosis, its cause, and the relationship of the various forms of arteriosclerosis to the specific diseases. Many attempts have been made to correlate such findings as serum cholesterol, serum cholesterol esters, and other blood findings with the presence or absence of coronary artery disease. The results of these studies have for the most part been disappointing. Recently, however, reports have reached the literature of a by-product of atomic energy studies with the ultra-centrifuge. Gofman and his group[9] at the University of California, working with the ultra-centrifuge, have demonstrated a class of lipid and lipo-protein molecules in the serum of man. They have demonstrated these molecules at much higher frequency and at higher concentrations in patients who have survived myocardial infarction than in individuals of the same age and sex with no known cardiovascular disease. These molecules were also found with increased frequency in other diseases associated with excessive atherosclerosis. Unfortunately, the cost of the ultra-centrifuge plus the large number of specially trained personnel needed in its upkeep make this a procedure very unlikely to be used clinically in the near future. Although Gofman states that these molecules do not represent any part of the acute alimentary lipemia, Schwartz and his associates[10] have recently reported a simple test of alimentary lipemia. In a preliminary report, Schwartz[10] feels that his findings are parallel to those of Gofman. If so, a very valuable procedure will be available at the bedside, because no special equipment is needed for its performance. We are at present performing this test on a group of patients with known cardiovascular disease and on a series of normals. It is too early at this time to make any predictions.

Studies of ventricular border motion by use of the electrokymograph have been most interesting in patients with coronary artery disease.[11] For the most part, the electrokymographic findings have been merely confirmatory of the other clinical examinations. We have had, however, several patients with definite histories of myocardial infarction in whom the electrocardiogram and Master two-step exercise test were negative. Electrokymograms of the left ventricle in these patients have shown a typical paradoxical pulsation (outward motion during systole with early diastolic collapse). This finding is highly suggestive of myocardial infarction; although several patients have been examined at autopsy who had this type of electrokymogram and no myocardial infarction was found, there still was evidence of marked myocardial degeneration.

Summary

The diagnosis of coronary insufficiency is one that, until recently, has been made entirely upon the subjective history of the patient. While a negative exercise or anoxemia test is not definite evidence against this diagnosis, a positive test should be considered as evidence of its presence. Subjects at present under investigation, such as the lipid and lipoprotein molecules in the blood and the ventricular border motion following myocardial damage, may soon offer valuable evidence to be used clinically in further confirmation of the diagnosis of this dread disease.

REFERENCES

1. Data published by the American Heart Association.
2. Herrick, J. B.: Clinical Features of Sudden Obstruction of the Coronary Arteries, J.A.M.A. 59: 2015, 1912.
3. Heberden, W.: Some Account of a Disorder of the Breast, Med. Tr. Roy. Coll. Phys., London 2: 59, 1772.
4. Master, A. M. and Jaffe, H. L.: The Electrocardiographic Changes After Exercise in Angina Pectoris, J. Mt. Sinai Hosp. 7: 629, 1941.
5. Master, A. M.: The Two-Step Exercise Electrocardiogram: A Test for Coronary Insufficiency, Ann. Int. Med. 32: 842, 1950.
6. Levy, R. L., Bruenn, H. G., and Russell, N. G., Jr.: The Use of Electrocardiographic Changes Caused by Induced Anoxemia As a Test for Coronary Insufficiency, Am. J. Med. Sci. 197: 241, 1939.
7. Wendkos, M. H.: The Influence of Autonomic Imbalance on the Human Electrocardiogram. I. Unstable T Waves in Precordial Leads from Emotionally Unstable Persons Without Organic Heart Disease, Am. Heart J. 28: 549, 1944.
8. Master, A. M., Pordy, L., Kolker, J., and Blumenthal, M. J.: The "Two-Step" Exercise Electrocardiogram in Functional Heart Disturbances and in Organic Heart Disease: The Use of Ergotamine Tartrate, Circulation 1: 692, 1950.
9. Gofman, J. W., Jones, H. B., Lindgren, F. T., Lyon, T. P., Elliott, H. A., and Strisower, B.: Blood Lipids and Human Atherosclerosis, Circulation 2: 161, 1950.
10. Schwartz, L., Woldow, A., and Dunsmore, R. A.: Comparison of Fat Tolerance As Determined by Alimentary Lipemia in Normal Individuals and in Patients Recovering from Acute Myocardial Infarction. Paper Presented at Eastern Sectional Meeting, Amer. Fed. Clin. Res., Washington, D. C., Dec. 9, 1950.
11. Clagett, A. H., Jr.: The Electrokymogram in Coronary Artery Disease, to be published.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion and policy of the Veterans Administration.

THE RADIOTHERAPY OF BENIGN LESIONS COMMONLY SEEN IN GENERAL PRACTICE

Samuel I. Adelman, M. D.*
Upper Darby, Pa.

General: There are numerous lesions that have been treated radiologically. Some have shown a consistent favorable response; others have reacted differently in different hands; while a third group have remained refractory in nearly all hands. This presentation is an effort to summarize a few, but by no means all, lesions that are generally regarded as being responsive to x-ray or radium therapy. These are well established indications over which no controversy exists, and good results are expected.

At this point it is well to define some terms used in radiotherapy. Radiotherapy here is reserved for all forms of radiation therapy; i. e., x-ray, radium, radioactive isotopes. X-rays, in turn, may be superficial, intermediate, or deep, depending on the penetrating ability or "hardness" of the x-ray beam. This, in turn, depends on the voltage of the generator; the higher the voltage, the shorter the wave length, the harder the beam and the more penetrating. Radiation from radium is fairly constant in wave length, "hardness" or penetrating ability. A beam of radium radiation compares physically and biologically with x-rays generated at high rather than low voltages. The x-ray beam, in turn, may be filtered or unfiltered. A filter is a thin metal sheet which functions by absorbing a portion of all wave lengths but removes mostly the softer or longer wave lengths; thus, by removing mainly the soft (long or less penetrating) wave length elements of the beam, the beam is "hardened" and is more penetrating than the unfiltered beam. The unit of dosage is the Roentgen, abbreviated "r".

---

*Attending Radiologist, V. A. Hospital.

No attempt is made here to give the details of technique; they are of interest mainly to the radiologist. Furthermore, radiologists modify the technical factors of dose, time interval, kilovoltage, filter, etc., to suit the requirements of the case at hand.

I. Inflammations

A. *Furunculosis* — Small amounts of radiation influence furuncles, carbuncles, or cellulitis favorably, especially when administered early, before suppuration has taken place. Its great value lies in treating lesions around the upper lip, nose, cheeks, and orbits where squeezing or incision may lead to a cavernous sinus thrombosis. Other sites are equally responsive. It should be emphasized that x-ray is the treatment of choice until suppuration develops. Thereupon, incision and drainage is indicated. Other measures can be used either independently or simultaneous to x-ray. For example, antibiotics or hot packs.

B. *Bursitis* — The acute form is most responsive It will give an excellent prognosis. X-ray examination will often show subdeltoid calcification. However, it is not necessary to regard this sign as the only criterion to initiate therapy. Clinical evidence is equally valid to establish the diagnosis. The pain comes on rather suddenly following trauma such as lifting, climbing, hammering. Point tenderness is found over the greater tuberosity. Pain radiates down the arm or up the neck, worse at night. The patient can abduct the arm up to 60° from the vertical and past 120°. Pain is exquisite in the arc of 60° to 120°. During the acute phase the patient should be warned not to use the arm. Following this phase he is urged to use it freely to prevent subsequent adhesions. After the first treatment the pain is sometimes made worse. The patient must be advised of this and given narcotics for use should he require them. The results of this regimen are brilliant. Often relief is felt after one or two treatments. Some radiologists prefer to give two treatments to the shoulder the first or even second day. Results are probably superior to injections of novocaine, needling, or surgery. The chronic forms show a good response in only a fair proportion of cases.

C. *Parotitis* — Only the suppurative, non-epidemic type should be submitted for radiotherapy. The treatment must be preceded by the removal of as much exudate as possible. This is accomplished by gentle massage on the cheek, while the cheek is held away from the teeth by a tongue blade to permit examination. Generally a mucopurulent plug is dislodged. Free drainage must be established or, following therapy, the pain will be worse. Thus it is important to precede every treatment by milking the gland. Some give two treatments the first day or two. The diagnosis of sialolithiasis, which may be responsible for the disease, can often be made by radiographic examination. Some advocate routine x-ray examination prior to x-ray therapy to determine the presence of stone. If the patient is unable to come for x-ray treatment, a radium pack may be used on the ward or in the home. These measures may prevent incision and drainage of the gland and the unpleasant sequelae of a persistent salivary fistulae.

D. *Lymphadenitis* — Peripheral tuberculosis adenitis shows a good response to x-ray. These swellings are usually in the cervical or supraclavicular chains. Hilar and mediastinal tuberculous adenitis on the other hand, as well as pulmonary tuberculosis, should not be radiated. Here, too, when fluctuation occurs, the glands should be aspirated (not incised). Response to x-ray is often not observed for two or three months.

E. *Acute Mastitis, Fissured Nipples* — These two painful lesions usually are found in nursing mothers. Most cases will show improvement following one or two treatments. A frank abscess is a surgical problem rather than one in radiology.

F. *Tinea Capitis* — About 85% of human tinea capitis is caused by Microsporum audouini; nearly all of the rest by Microsporum lanosum. The latter will respond to local measures; the former does not. The quickest cure is depilation by x-ray. The differential diagnosis of the two organisms is made by culturing infected hair. Preparation to radiotherapy includes clipping (not shaving) hair to 1/4 or 1/2 inches long. This enables hair to be pulled out with adhesive following x-ray. Following x-ray, hair loosens in two or three weeks. It may be removed easily by covering with adhesive and pulled out mechanically. Any secondary infection must be controlled. The infected hair is burned to prevent infecting others in the family. The clean shiny scalp will show the fuzz of new hair about eight weeks following x-ray. It is said that one case in 300 will remain permanently bald. It is, therefore, important to get written permission from the patient before proceding. Emphasis must be laid on the proper technical details of dose, filter, voltage, skin target distance, and protection (of eyes, eyebrows, ears, nose) in order to prevent damage to the hair, skin, brain, and other tissues. In view of these considerations, x-ray should be reserved only for those cases where other measures have failed.

G. *Acne* — There are certain controversial aspects relating to the treatment of acne. Therefore, it is not discussed here.

H. *Neurodermatitis* — This annoying skin lesion can be controlled by very small amount of unfiltered 100 KV radiation (25r) given in a sitting and, if necessary, repeated in two or three days or a week, depending on clinical findings. It is likely to recur since it is a manifestation of nervous instability. X-ray stops the pruritus, which in turn stops the scratching and permits any infection to heal — thus the vicious cycle of itch, scratch, infection, itch, scratch, is broken. Antipruritics should first be tried. Their use often obviates radiotherapy. A careful record must be kept by the radiologist to prevent overdosage throughout the long time the disease is present.

I. *Dermatophytosis* — "Athlete's Foot." This disease is usually found on the hands and feet. It is best to try other forms of therapy first. When other means have failed, x-ray is indicated. Occasionally the lesions will disappear after a few weekly treatments. Often, however, they recur. Occasionally they respond permanently. The patient should be questioned regarding use of previous x-ray. Guard against over-treatment because of the chronicity of this disease. Do not use x-ray together with local applications.

II. Other Lesions

A. *Hemangioma* — These are of three types. It is important to recognize each since the response to radiation varies.

a. Nevus flammeus (port wine mark). It does not respond to radiation. They are usually found on the face and neck. They are *never* elevated above the skin surface. Occasionally they are treated with carbon dioxide snow. They may be concealed by "Covermark" face powder.

b. Nevus vasculosius (strawberry mark). They are rarely present at birth, appearing at the age of one month. If carefully examined with a magnifying glass, a faint yellow-red zone is seen around the margin of the lesion. This zone is the extent to which the lesion will eventually extend. The lesion is elevated above the skin level. It may be treated with carbon dioxide snow, x-ray or radium. It should, however, be treated as early as possible to prevent trauma, bleeding, and infection, and for cosmetic reasons, even though some do regress spontaneously.

c. Angioma cavernosum. They vary in size, in elevation and location in the skin or mucous membrane of tongue, cheeks, labia. The superficial lesions may be treated with x-ray or radium. Deeper lesions are treated with interstitial radon or x-ray. Special care is required if the lesion is over the ovaries, testes, or epiphyseal ends of bone. Some prefer to inject a sclerosing solution of sodium morrhuate as another modality. This seems to produce more scarring.

B. *Thymic Enlargement* — Enlargement of the thymus is found usually during the first year of life and may be clinically manifest by a cough, inspiratory stridor, dyspnea, choking on nursing, intermittent cyanosis. X-ray in the postero-anterior and lateral views show the enlargement and tracheal buckling. Lymphocytes are very radiosensitive. The thymus, which consists largely of lymphocytes, will then shrink after a small dose. Therapy should not be given simply because of the presence of thymic enlargement. It should be administered only in the face of symptoms. Relief is often evident twelve hours following treatment. Occasionally two or three treatments are needed.

C. *Lymphoid Tissue in the Nasopharynx*— Lymphoid hyperplasia in the nasopharynx is often the beginning of upper respiratory infections which interfere with olfactory and auditory function. Nodules of this type occurring in the nasopharynx around the Eustachian orifice, choanae and turbinates which are often inaccessible to surgery will be the forerunner of sinus infections and ear symptoms. Irradiating and shrinking this lymphoid tissue often relieves the resultant sinusitis, impaired hearing and recurrent otitis media. Sometimes it is done in conjunction with surgical removal of hypertrophied adenoids in children. Enlarged adenoids per se are a surgical problem. The small remaining nodules described above and inaccessible to surgery should be shrunken by radiation. Otherwise they tend to enlarge and give symptoms. This is best done by a specially designed nasopharyngeal radium applicator.

D. *Plantar Warts* — There are two types: (1) the common wart, and (2) the mosaic, which has numerous puncta. The common wart will give good results while the mosaic is radioresistant. Before treating, remove as much of the thick horny layer as possible. The dose may be given either at one time or divided into two doses, each a week apart. Protect the surrounding skin with a lead shield. Keep patient off his feet if in pain. Pain will disappear in two to four days. The lesion disappears in three to six weeks. Do not exceed the given dose. It is dangerous and may lead to ulceration. Surgery is an alternative method. Dr. Edward Chamberlain has suggested 100,000 units vitamin A daily for six weeks and a callus file (emery board) to remove the horny layer, used daily.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion and policy of the Veterans Administration.

Uncannily Prophetic

A friend of ours once went to considerable pains to prove that there is "nothing new under the sun." The other day we ran across this uncannily prophetic quotation that seems to bear him out.

It was written in the year 1834 by the French author, Alexis de Tocqueville. We quote it below without further comment:

"Today there are two great peoples who, starting from different points, seem to approach the same destiny; they are the Russians and the Americans. Both of them have grown in obscurity, and, while men were looking the other way, they have suddenly reached the first rank of nations. . . .

"All other peoples seem to have nearly reached the limits of their potentialities. . . . But these two peoples are growing. These alone follow a course whose limit the eye cannot yet detect.

"The American battles the obstacles of nature; the Russian, those of man. The former combats the wilderness and savagery; the latter, civilization with all of its weapons. American conquests are won with the laborer's ploughshare; Russian triumphs with the soldier's sword. To attain its ends, the American relies upon personal interest and allows free scope to the unguided energy and common sense of individuals. The Russian somehow concentrates the power of society in one man. The method of the former is freedom; the latter, servitude.

"Their starting point is different, their ways are diverse, and yet each of them seems called upon by the secret design of Providence to control, some day, the destinies of half the world."

—Portland (Ind.) *Graphic and Pennville Booster*

1789—MEDICAL SOCIETY OF DELAWARE—1951

OFFICERS

President, Charles E. Wagner, Wilmington
President-Elect, Ervin L. Stambaugh, Lewes
Secretary, Andrew M. Gehret, Wilmington
Vice-President, Benjamin F. Burton, Dover
Treasurer, Joseph M. Messick, Wilmington
Executive Secretary, W. Edwin Bird, M. D., 822 N. American Bldg., Wilmington

American Medical Association (1951) Delegate: James Beebe, Lewes   Alternate: C. E. Wagner, Wilmington
Representative to Delaware Academy of Medicine, W O. LaMotte, Wilmington

STANDING COMMITTEES

Scientific Work
R. W. Comegys, Clayton
O. A. James, Milford
A. M. Gehret, Wilmington

Medical Education
R. O. Y. Warren, Wilmington
J. L. Fox, Seaford
H. W. Smith, Harrington

Publication
W. E. Bird, Wilmington
M. A. Tarumianz, Farnhurst
A. M. Gehret, Wilmington

Public Laws
J. S. McDaniel, Dover
J. W. Lynch, Seaford
E. R. Mayerberg, Wilmington
J. D. Niles, Middletown
V. D. Washburn, Wilmington

Budget
J. M. Messick, Wilmington
Charles Levy, Wilmington
M. A. Tarumianz, Farnhurst
W. T. Chipman, Harrington
J. R. Elliott, Laurel

SPECIAL COMMITTEES

Advisory, Woman's Auxiliary
Roger Murray, Wilmington
Charles Levy, Wilmington
J. M. Messick, Wilmington
J. J. Lazzeri, Smyrna
J. R. Elliott, Laurel

Cancer
D. M. Gay, Wilmington
J. V. Casella, Wilmington
J. F. Hynes, Wilmington
E. G. Laird, Wilmington
W. W. Lattomus, Wilmington
C. J. Prickett, Smyrna
R. R. Layton, Dover
James Beebe, Lewes
Bruce Barnes, Seaford

Tuberculosis
L. D. Phillips, Marshallton
G. A. Beatty, Wilmington
I. B. Flinn, Wilmington
J. S. McDaniel, Jr., Milford
L. C. McGee, Wilmington
J. M. Messick, Wilmington
C. J. Prickett, Smyrna
William Marshall, Jr., Milford
C. M. Moyer, Laurel

SPECIAL COMMITTEES

Maternal and Infant Mortality
A. H. Williams, Laurel
C. T. Lawrence, Jr., Wilmington
C. L. Hudiburg, Wilmington
S. W. Rennie, Wilmington
R. O. Y. Warren, Wilmington
B. F. Burton, Dover

Mental Health
G. W. K. Forrest, Wilmington
J. S. McDaniel, Jr., Dover
O. V. James, Milford

Industrial Health
L. C. McGee, Wilmington
G. H. Gehrmann, Wilmington
H. L. Springer, Wilmington
E. H. Mercer, Dover
H. V'P Wilson, Dover
D. L. Bice, Seaford
A. C. Smoot, Georgetown

Vocational Rehabilitation
James Beebe, Lewes
G. A. Beatty, Wilmington
I. M. Flinn, Wilmington
T. B. Strange, Wilmington
W. C. Pritchard, Smyrna

Heart Disease
E. R. Miller, Wilmington
A. H. Clagett, Jr., Wilmington
E. M. Krieger, Wilmington
F. R. Everett, Dover
R. L. Klingel, Lewes

Diabetes
L. B. Flinn, Wilmington
J. R. Durham, Jr., Wilmington
Charles Levy, Wilmington.
L. L. Fitchett, Milford

Arthritis
A. J. Heather, Wilmington
I. M. Flinn, Wilmington
A. R. Shands, Wilmington
C. C. Fooks, Milford
O. A. James, Milford

Health & Sanitation
E. R. Mayerberg, Wilmington
G. A. Beatty, Wilmington
V. D. Washburn, Wilmington
W. T. Chipman, Harrington
H. V'P. Wilson, Dover
Bruce Barnes, Seaford
E. L. Stambaugh, Lewes

Fees for Welfare Patients
R. W. Comegys, Clayton
A. R. Crutchley, Middletown
J. W. Lynch, Seaford

SPECIAL COMMITTEES

Medical Service and Public Relations
E. R. Mayerberg, Wilmington
B. M. Allen, Wilmington
W O LaMotte, Wilmington
C. L. Munson, Wilmington
W. M. Pierson, Wilmington
J. S McDaniel, Dover
H. V. P. Wilson, Dover
J. W. Lynch, Seaford
O. A. James, Milford

Rural Medical Service
J. R. Downes, Newark
C. R. Donoho, Newark
J. D. Niles, Middletown
C. J. Prickett, Smyrna
H. W. Smith, Harrington
Bruce Barnes, Seaford
H. S. Riggin, Seaford

Care of Colored People
H. T. McGuire, New Castle
Conwell Banton, Wilmington
S. G. Elbert, Jr., Wilmington
I. J. MacCollum, Wyoming
J. L. Fox, Seaford

National Emergency Medical Service
J. R. Beck, Wilmington
C. L. Munson, Wilmington
W. F. Preston, Wilmington
S. H. Stradley, Wilmington
V. D. Washburn, Wilmington

Medical Economics
Ira Burns, Wilmington
J. S. McDaniel, Jr., Dover
J. E. Marvil, Laurel

Hospitals and Practice of Medicine
J. W. Howard, Wilmington
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
W. O. LaMotte, Wilmington
C. E. Wagner, Wilmington
J. S. McDaniel, Dover
J. B. Waples, Georgetown

Social Hygiene
A. D. King, Wilmington
E. H. Mercer, Dover
James Beebe, Jr., Lewes

Grievance Board
G. W. K. Forrest, Wilmington
I. L. Chipman, Wilmington
J. D. Niles, Middletown
I. J. MacCollum, Wyoming
James Beebe, Lewes

WOMAN'S AUXILIARY

Mrs. Douglas M. Gay, *President*, Wilmington
Mrs. S. W. Rennie, *President-elect*, Wilmington
Mrs. E. T. O'Donnell, *Corresponding Secretary*, Wilmington
Mrs. Andrew M. Gehret, *Recording Secretary*, Wilmington
Mrs. Lawrence W. Fitchett, *Treasurer*, *Milford*

NEW CASTLE COUNTY MEDICAL SOCIETY

Meets Third Tuesday

V. D. Washburn, *President*
W. W. Lattomus, *President-elect*
S. H. Stradley, Jr., *Vice-President*
H. H Stroud, *Secretary*
C. M. Bancroft, *Treasurer*
E. C. Syrovatka, *Executive Secretary*

Councilors (1952): L. C. McGee, H. T. McGuire, J. C. Pierson.

Delegates (1951): E. M. Bohan, Ira Burns, Junius A. Giles, A. D. King, E. G. Laird, W O. LaMotte, Sr., Charles Maroney, E. M. Mayerberg, W. M. Pierson, Edward Parvis, O. N. Stern, H H. Stroud, M. A. Tarumianz.

Alternates (1951): Steven Bartoshesky, Joseph Beck, Allen Fleming, Mildred Forman, David J. King, A. G. Lessey, Wm. T. McLane, Douglas Sanders, Paul Shaw, Roger B. Thomas, R. O. Y. Warren.

Delegates (1951-52): N. L. Cannon, I. L. Chipman, Sr., J. A. Giles, A. L. Heck, Charles Levy, C. L. Munson, M. B. Pennington, J. C Pierson, S. H. Stradley, Jr., G. W Vaughn, V. D. Washburn

Alternates (1951-52): L. V. Anderson R. E. Allen, J W. Barnhart, J. M. Barsky, Jr., W W. Briggs, Italo Charamella, J. A. Chrzanowski, C. T. Lawrence, F. A Jones, C P. Johnson, T. E. Resnick, F S. Skura, H. A. Tarrant.

MEDICAL COUNCIL OF DELAWARE

Hon. Charles S. Richards, *President*; Joseph S. McDaniel, M. D., *Secretary*; Wallace M. Johnson.

KENT COUNTY MEDICAL SOCIETY

Meets First Wednesday

R. R. Layton, Jr., *President*, Dover
J. B. Baker, *Vice-President*, Milford
J. S. McDaniel, Jr., *Secretary-Treasurer*, Dover

Councilors. C. J. Prickett, Smyrna and Wm. Marshall, Milford.

Delegates: H. V. P. Wilson, Dover, and I. J. MacCollum, Wyoming.

Alternates: J. S. McDaniel, Dover, and H. W. Smith, Harrington.

DELAWARE STATE DENTAL SOCIETY

J. S Mack, *President*, Seaford
J. F. Maguire, *1st V. P.*, Wilmington
H L. Kurfirst, *2nd V. P.*, Wilmington
James Krygier, *Secretary*, Wilmington
Louis Kreshtool, *Treasurer*, Wilmington
P. E. Musselman, *Delegate A.D.A.*, Newark.
Clyde Nelson, *Alternate A.D.A.*, Milford.

DELAWARE STATE BOARD OF HEALTH

J. D. Niles, M. D., *President*, Middletown; I. J. MacCollum, *Vice-President*, Wyoming: C. E. Moore, D. D. S., *Secretary*, Seaford; Bruce Barnes, M. D., Seaford; Mrs. C. M. Dillon, Wilmington; Mrs. A. Louise Cochran, Middletown, R1; Howard N. Stayton, M. D., Wilmington; Mrs. N. W. Voss, Wilmington. Floyd I. Hudson, M. D., *Executive Secretary*, Dover.

BOARD OF MEDICAL EXAMINERS

J. S. McDaniel, *President-Secretary*; Wm. Marshall, *Assistant Secretary*; W. E. Bird, J. E. Marvil, L. J. Jones.

SUSSEX COUNTY MEDICAL SOCIETY

Meets Second Thursday

O. A. James, *President*, Milford
J. L. Fox, *Vice-President*, Seaford
T. J. Tobin, *Secretary-Treasurer*, Milton

Councilors: J. W. Lynch, Seaford; A. C. Smoot, Georgetown.

Delegates: Bruce Barnes, Seaford; D. L. Bice, Seaford; C. M. Moyer, Laurel; G. M. Van Valkenburgh, Georgetown.

Alternates: W. G. Hume, Selbyville; R. L. Klingel, Rehoboth; A. C. Smoot, Georgetown: E. L. Stambaugh, Lewes.

DELAWARE ACADEMY OF MEDICINE

Open 10 A.M. to 5 P.M.

B. M. Allen, M.D., *President*.
W. M. Pierson, M.D. *First Vice-President*.
R. R. Wier, D.D.S., *Second Vice-President*.
A. M. Gehret, M.D., *Secretary*
I. M. Flinn, M.D., *Treasurer*.
E. C. Syrovatka, J D., *Librarian*

DELAWARE PHARMACEUTICAL SOCIETY

Walter A. Schueler, *President*, Wilmington.
Harry C. Helm, *First Vice-President*. Dover.
Earl Hastings, *Second Vice-President*, Selbyville.
Walter E. Brown, *Third Vice-President*, Holly Oak.
J. Wallace Watson. *Secretary*, Edge Moor.
Albert Dougherty, *Treasurer*, Wilmington.

✚ Editorials ✚

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building
Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place
M. A. Tarumianz, M. D. ....Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 23 March, 1951 No. 3

THE 1951 ANNUAL SESSION

The next Annual Session of the Medical Society of Delaware will be held in Wilmington at the Hotel DuPont, October 8-10, 1951. On the evening of October 8 there will be held a meeting of the Council, followed immediately by the meeting of the House of Delegates. On Tuesday, October 9 and Wednesday, October 10 there will be held scientific sessions both morning and afternoon. On Tuesday there will be a luncheon, as guests of the New Castle Medical Society, and on Wednesday the luncheon will be given by the Medical Society of Delaware.

We have not been advised of any plans for the meeting of the Woman's Auxiliary, nor could we expect to at this early date, because it is only just now that the dates and reservations for the Medical Society meeting have been completed.

From the prompt responses of the prospectus for the Technical Exhibit, this feature of our session bids fair to surpass that of any previous year, both in the number of spaces sold and in the revenue derived therefrom.

The main matter to get under way now is, of course, the scientific program. A desire has been expressed to us to have five or six papers contributed by Delaware doctors. We concur heartily in this feature and urge every member of this Society who is willing to take the time and trouble to prepare a worthwhile paper to contact the office of the Executive Secretary promptly, in order that proper subjects may be arranged for. The time is now—do it now!

THE RED FEATHER

As chairman of Community Chests of America, Charles E. Wilson, newly-appointed Director of the Office of Defence Mobilization says, "In the awesome age of the atom bomb there is still one thing that is indestructible, and that is human happiness. I am convinced that we are now being tested as never before on those scales. This is first of all a domestic product, but its effects are exportable and they are powerful. I know of no group, no task force, no army that is more directly concerned with the continued production of human happiness in America than the Community Chest services which fight under the symbol of the Red Feather."

* * *

The contributions to Community Chests throughout the country for local health and welfare services and for emergency defense services are greatest in the history of Community Chests, according to latest figures available from Community Chests of America. Total results of Red Feather campaigns for 1951 will exceed 200 million dollars, 110% of last year's total.

New Blood Vessel Bank Preserves Grafts For Surgery

Doctors have established a new type of "bank" which collects and preserves human blood vessels. The first such bank has been established at New York Hospital, Cornell Medical Center and Bellevue Hospital, part of the New York University-Bellevue Medical Center. Desirability of such a bank became apparent with the development of new techniques in cardiovascular surgery in which normal blood vessel grafts from deceased persons are transplanted to patients with diseased or abnormal vessels.

The use of blood vessel grafts is already well recognized in surgical treatment of patients suffering from constriction of the main artery of the heart; malignant conditions necessitating the sacrifice of a vital blood vessel, and aneurysms.

The blood vessel bank, its function and its contribution to cardiovascular surgery are described by a group of New York surgeons in the current (March 24) *Journal of the American Medical Association.* The surgeons are Drs. Edward B. C. Keefer, William DeW. Andrus, Frank Glenn, George H. Humphreys II, Jere W. Lord, Jr., Wallace B. Murphy, and Arthur S. Touroff. Dr. Robert E. Gross of Boston is believed to be the first to successfully use blood vessel grafts as early as 1948. He preserved sections of vessels for future use but on a small scale.

The New York bank, on the other hand, draws its supply from all available New York hospitals. It was established in July, 1949. A large number of hospitals are necessary to provide donor material in sufficient quantity for such a bank, the doctors said. They explained there is nearly always difficulty in obtaining permission for autopsy and, in addition, only a small number of the autopsies actually performed provide suitable donor material. For example, from May 14, 1949 to May 14, 1950 there were only 28 autopsies from which usable donor grafts could be taken, or 6.2 per cent of all the autopsies done.

It also is desirable to have a choice of different sized grafts because of the individual variations in the calibre of the vessels and, despite the shortage of material, a central storage depot makes this choice possible.

A constant race against time exists in maintaining an adequate supply of donor material, they said. A graft must be taken as soon as possible, preferably not later than six hours after death of the donor. This demands fast action by the house staff in obtaining permission for complete autopsy and clearing the permit through the hospital administration. The shortness of storage time of the grafts (from four to six weeks) also means the supply must be constantly replenished. For these reasons, the authors believe, more than one blood vessel bank in a city — even a city the size of New York — would be impractical.

Preferred blood vessel donors are those under 45. The graft is usually a section of the aorta. The size of the aorta near the heart can be compared to a thumb. It gradually diminishes in size as it gets farther away from the heart. If possible, long sections of the vessel are taken. The graft can then be trimmed to suitable size when it is used.

At the time of autopsy a small piece of the prospective graft is set aside for tissue culture and careful examination. If the examination reveals any alteration from the normal standard, the graft is discarded. Another tissue culture is performed on the vessel just before it is used.

At the New York bank, the graft is kept in a nutrient solution under refrigeration. Another method of storage by deep freeze was also discussed in the article. Each method has certain advantages but neither has been proved sufficiently superior to be the procedure of choice. Research is being carried on to improve storage, thus lengthening its maximum time limit past the 4 to 6 weeks' mark.

"Establishment of blood vessel banks now seems desirable in large cities where cardiovascular surgery is performed," they said. ". . . It is hoped that the actual existence of a successfully functioning blood vessel bank, such as the New York bank, will help to inform the laity of its value and thus aid in removing one of the major obstacles to success, the difficulty in obtaining autopsy permission for grafts."

OBITUARY

Robert W. Tomlinson, M. D.

Dr. Robert W. Tomlinson, 67, former Wilmington physician, died on March 1, 1951 in the Wilkes-Barre, Pa., General Hospital. He had been in failing health for three months.

He was the widower of Mrs. Mildred Hutton Tomlinson, who died in July 1948.

Dr. Tomlinson was the son of Dr. Peter W. Tomlinson, and Virginia C. Hazzard Tomlinson. The senior Dr. Tomlinson was a founder of the Continental Life Insurance Company, was the medical director there for many years, and served as president of the Medical Society of Delaware.

Dr. Tomlinson attended city schools, the former Wilmington Military Academy, and the Worcester (Mass.) Academy before entering the University of Virginia. He took his medical degree at Jefferson Medical College, Philadelphia in 1912, and began to practice in Wilmington.

He was a member of the Delaware National Guard unit which was sent to the Mexican border in 1916. In 1930 he served as President of the New Castle County Medical Society. He was also a member of Delaware Consistory.

For the past 15 years Dr. Tomlinson has been associated with the Veteran's Administration, the last five years stationed at Wilkes-Barre.

Dr. Tomlinson is survived by a daughter, Mrs. John P. Stokes, of Chatham, N. J.; a step-daughter, Mrs. Natalie Bradford, of this city, and four grandchildren.

Funeral services were held in St. George's Chapel, near Dagsboro, on March 3, 1951, with burial in the cemetery there.

BOOK REVIEWS

Pathologic Physiology: Mechanism of Disease. Edited by William A. Sodeman, M. D., Pp. 808, with 146 figures and 30 tables. Cloth. Price, $11.50. Philadelphia: W. B. Saunders Company, 1950.

This volume is a collaborative effort by 25 distinguished authors. We take pride in the fact that one of the authors is our friend, John H. Fougler, M. D., Ph. D., F.A.C.P., Director, Haskell Laboratory of Industrial Toxicology, Wilmington, Delaware. This is not another textbook of physiology, rather, it is an interesting way of analyzing the symptoms and signs of diseases and the mechanisms of their development.

The various systems are discussed individually, the circulatory system probably being the one most minutely outlined. A chapter on Water Balance describes the latest mechanisms involved in the distribution and disposition of body fluids.

The chapter on Chemical Agents and Disease is very interesting since the causes are non-bacterial and a doctor often fails to keep in mind the role of chemicals in disease production unless he takes a very careful occupational history.

There is no discussion on the mechanism of impulse transmission through the nerve ends to the motor end-plates and the pathologic physiology involved in the muscles of the acute poliomyelitis patient. A brief mention is made on page 644 to the effect that "the muscles innervated by the nerves whose nuclei have been destroyed become paralyzed and atrophic" and "non-paralyzed muscles often become spastic and account for much discomfort and dysfunction in addition to the paralysis". However, no mechanism is described for the production of muscle spasm, nor for the alterations in the metabolism of the poliomyelitis muscle.

A carefully selected list of references is given at the end of each chapter.

Medical students and general practitioners will find this a very useful book.

An Atlas of Human Anatomy. By Barry J. Anson, Ph.D., Professor of Anatomy, Northwestern University Medical School. Pp 518. Cloth. Price, $11.50. Philadelphia: W. B. Saunders Company, 1950.

This is an unusually well illustrated atlas of human anatomy, with large drawings of well dissected specimens of the body. Only essential descriptive matter is given through the atlas so that the student, the practitioner or the surgeon need not spend a great deal of time in reading in order to understand the anatomical parts illustrated.

The arrangement of the material is orderly and easy to locate without having to struggle through the index.

Medical Diagnosis: Applied Physical Diagnosis. Edited by Roscoe L. Pullen, M. D., Second Edition. Pp. 1119, with 601 figures, 48 in color. Cloth. Price, $12.50. Philadelphia: W. B. Saunders Company, 1950.

This is an excellent book on the methods of physical diagnosis and the interpretation of physical findings. Medical students and busy physicians, regardless of specialty, will find this a very easily accessible source of information for every system of the body.

The regional method of presentation adds to the reference value. Besides a complete discussion of every part of the body, the author presents separate chapters on the Medical History, Electrocardiographic Diagnosis, Blood, the Child, the Aged, and the Psychiatric Patient.

Diabetes Guide Book, for the Physician. By the American Diabetic Association, Inc., New York. Pp. 79.

This is a pocket size paper handbook on the diagnosis and treatment of diabetes. The booklet presents information which will assist the physician in his dealings with diabetic problems. This essential information is well outlined so that it is easily available for the busy physician.

Medical Care for Americans. In the Annals of the American Academy of Political and Social Science. Philadelphia. Price, $2.00. (January) 1951.

This issue of the *Annals* is devoted to an impartial presentation of all the important problems relating to American medical care. We are all agreed that medical care of the highest standards in quality and quantity should be available to everyone. In order to reach a fair conclusion as to the most feasible manner in which this can be accomplished at the present time one should study carefully the factual information assembled in this volume by distinguished leaders in American medicine and public health.

The trend at the present time is toward the voluntary non-profit prepayment plans. Although they have many shortcomings, more time is needed to prove their applicability to "everyone."

The American Nurses Dictionary. By Alice L. Price, B.S., R.N. Pp. 656. Cloth. Price, $3.75. Philadelphia: W. B. Saunders Company.

This book is designed to meet the requirements of nurses. Approximately 25,000 words are defined in the book. Pronunciation is clearly indicated, showing the correct vowel sounds and the main accented syllable of the word. Standard abbreviations, with the meaning of each, are included in the text. Tables of arteries, bones, muscles, cranial nerves, veins, and chemical elements encountered in the study of nursing appear at the end of the book. This section also includes lists of abbreviations, prefixes, suffixes, and symbols.

A Vocabulary Guide is also furnished as a teacher's supplement which lists the common terms encountered in each medical subject taught to nurses.

This is a very complete dictionary, in clear type, and should be very useful in nursing schools.

Natural Childbirth By Frederick W. Goodrich, Jr., M. D. Pp. 175. Cloth. Price, $2.95. New York: Prentice-Hall, Inc.

A very well prepared manual for expectant parents. The author makes a very successful attempt to prepare the expectant mother intellectually, physically, and emotionally for childbirth. The chapters on Relaxation, Exercise, and Diet are very useful and if carefully followed should assist the expectant mother a great deal. This book explains the facts which parents should know and thus help to allay many of their fears, which are usually based on superstition.

Physical Diagnosis. By Ralph H. Major, M. D., Professor of Medicine at the University of Kansas. Fourth edition, illustrated. Pp. 446. Cloth. Price, $6.50. Philadelphia: W. B. Saunders Company.

The medical student will find Major's Physical Diagnosis a very useful book. The numerous photographs used to illustrate normal and abnormal physical findings will make lasting impressions on his mind. The author carries out the well established methods of physical diagnosis and emphasizes their importance — inspection, palpation, percussion, and auscultation. Pain and general inspection are discussed in two chapters, followed by the examination of the body from the head down.

Medical students and physicians soon learn that experience is the backbone in the art of medicine, and as Osler said of medicine: "'tis not an inheritance; it cannot be revealed. Learn to see, learn to hear, learn to feel, learn to smell, and know that by practice alone can you become expert." This book helps one to gain the technique necessary in looking for and interpreting physical signs.

A bibliography of the original descriptions published by the "older masters" is given at the end of each chapter.

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 4

APRIL, 1951

Per Copy, 50c
Per Year, $4.00

THE USE OF FAT IN A WEIGHT REDUCING DIET*

Alfred W. Pennington, M. D.,
Wilmington, Del.

Lavoisier, in the latter part of the eighteenth century, established, in principle, that the law of the conservation of energy applies to the biochemistry of nutrition. Thus, the foundation was laid for a scientific knowledge of the energy transformations within the body, known as metabolism. One of the things Lavoisier knew was that the ingestion of food increases the heat production of the body; and this scientific datum, more than one hundred and fifty years old, forms the core of the thesis which it is my honor to present to you today.

The energy of the body is derived entirely from food. This means that, when physical work is done, chemical energy has been transformed into mechanical energy. To accomplish this transformation, the human body is endowed with intricate chemical enzyme systems; and the energy required for the operation of these is also derived from food.

The chemical energy residing in the food we oxidize is ultimately accounted for as heat, in most part whether we accomplish physical work or not. The situation is roughly analagous to that of a stove. Fuel is put in and burned: heat is produced and this radiates to the surroundings.

The human body possesses an elaborate radiator system which is controlled with thermostatic precision. It responds to conditions exterior to the body and also to conditions existing in the interior, with the result that the body temperature is ordinarily kept within narrow limits. It is to the internal conditions affecting this radiator mechanism that I would like to direct attention.

If much food is eaten and oxidized, much heat is produced and radiated. If little food is eaten and oxidized, there is less heat production. Whether much or little heat is produced, the temperature of the body, taken as it ordinarily is at the periphery, is fairly constant. The thermal gradient from within, out, may be steep or almost level, for the temperature regulating mechanism responds effectively to varying quantities of heat production in the interior.

Although the temperature of the body is controlled with a fine degree of precision, there is not, as far as is known, a control of heat production in any way similar. Heat production increases when physical exercise, largely of a voluntary character, is performed. It is increased under certain environmental conditions which stimulate the thyroid and the adrenal glands and also the appetite. For the person who engages in little vigorous exercise and whose clothing protects him against great temperature changes, however, the essential influence on heat production is the ingestion of food. When food is eaten, heat production begins to rise within an hour and continues for several hours at an accelerated rate.

Food which is eaten and not oxidized is stored in the body as fat. It is obvious, therefore, that, if a person is gaining weight, he is eating some food from which he is obtaining no energy. It has commonly been assumed, without scientific foundation, that given sufficient food, the energy requirements will be optimally fulfilled and that any excess will be converted to fat. This theory assumes a precise regulatory control over heat production which no scientific investigation has yet disclosed. Acting, however, on the theory that such a regulatory mechanism exists, calculations of energy requirements have been made by adding the figure determined from the respiratory equivalent in the resting, fasting state to an estimate of the energy needed for physical work. The sum of these has been believed to represent an individual's caloric needs; and students of home economics have become very proficient in translating this figure into terms of food. If a person eats more than this figure calls for it is expected that he will gain weight. If, then, he is given a diet of lower caloric value than his calculated requirement, it is predicted that he will lose weight; and if the predictions of the calculator are not fulfilled, the patient is suspected of being a glutton on the sly or else of having found some way of violating the laws of thermodynamics.

---

*Read before the Medical Society of Delaware, Dover, October 4, 1950.

The basis on which such a view rests is entirely theoretical and the nutritional data supporting it are meagre and conflicting. In reviewing the matter critically one can hardly avoid the conclusion that the essential basis of it is a strong conviction, a matter of faith.

Although no physiological mechanism regulating the production of heat has been found, something is known of circumstances which limit the ability of the body to convert food into energy and which, indeed, may cause energy production to fall far short of the optimum. Details which throw light on these matters have become available to us since the discovery of deuterium. This paved the way for an extensive use of isotopes as tracer elements in physiological investigations. We now have a concept of the tissue structure of the body which varies greatly from concepts of the past. The protein tissue structures are not static, but are in a continual state of exchange, new protein being laid down and the old removed.[1] Fat deposits of the body, also, are maintained by a balance of forces:—those which are continually depositing new fat and those which are mobilizing the old. An even greater condition of flux exists in regard to the carbohydrate stores of the body, meagre as those are. It is to be expected, in considering this dynamic state of affairs, that the energy requirements for optimal functioning of all these biochemical exchanges might well be greater than was previously thought, and that they should exceed the mere requirement for keeping the body warm. Energy is needed for growth of the body and, when full growth is achieved, energy is needed to prevent deterioration.

There are two factors which can limit the production of energy from food, once it has been ingested and absorbed. One is the capacity of the tissues to oxidize a food substance and the other is a mechanism which withholds the food substance from the tissues. It is enlightening to examine these two factors in their relation to the major dietary sources of energy—carbohydrate and fat.

The ability of the tissues to oxidize carbohydrate is limited by their capacity for breaking down pyruvic acid to the two-carbon intermediaries which enter the tricarboxylic acid cycle for the final and complete combustion of carbohydrate to carbon dioxide and water.[2,3] For this link in the chain of enzyme reactions involved in the oxidation of carbohydrate, thiamine is needed[4] as well as biotin[5] and we know not what else of exogenous source. Even when the most favorable enzymatic conditions exist, the capacity of the tissues to break down pyruvic acid can be overwhelmed[6] with the result that pyruvic acid returns to the liver, where it is converted to fatty acids.[7]

The ability of the tissues to oxidize fat is, in contrast to carbohydrate, unlimited. Fat itself, in the triglyceride form familiar to the dinner table, is not directly combusted; but the fatty acids into which triglyceride fat is easily hydrolized, are utilized by the tissues for energy in preference to carbohydrate[8]. Even more striking than this is the ability of the tissues to oxidize the ketone bodies which the liver normally forms from fat. Stadie has estimated that the peripheral tissues can burn fat, as ketones, in an amount four to six times an individual's basal requirement[9]. In a person whose basal requirement was 2000 calories this would mean that his tissues could oxidize ketones in an amount representing 8,000 to 12,000 calories. It is hardly possible that such an amount would ever be presented to the tissues for their consumption; and it is not to be wondered at that the human body is endowed with a mechanism which will store this excellent fuel in considerable quantities.

This view, that fats are the preferred fuel of the tissues, that they are oxidized more readily than carbohydrates and without the aid of carbohydrates, is a physiological discovery for which we are indebted to the investigations made possible by tracer elements. It represents a complete reversal over views previously held. One of the most unfortunate days in the history of modern medicine was the day that Macleod made the famous statement which runs as follows: "If the carbohydrate fires do not burn briskly enough, the fat is incompletely consumed; it smokes, as it were, and the smoke is represented in metabolism by the ketones and derived acids."[10] That imaginative statement, made by a great physiologist, has so laid hold on the minds of generations of medical graduates that the experimental work of Stadie and others seems to have had little effect. To those who repeatedly quote Macleod's statement to me I am sometimes tempted to say: "Do you know fat burns?" Fat burns in the body, hot and clean!

Thus, modern biochemical investigations indicate that the tissues have a limited capacity to burn carbohydrate and that when that substance is presented to the tissues in excess of that capacity it will be broken down as far as the pyruvic acid stage and then converted to fatty acid; while fat, in the form of fatty acids and ketones, will burn in an unlimited amount, as long as it is presented to the tissues.

Now, it might well be asked why, when pyruvic acid is converted to fatty acid, is it not then burned as such by the tissues. There is no doubt that it is and that this is the way in which much dietary carbohydrate is made use of in the body, particularly during physical exercise. But now we must consider a particular balance of forces—those which promote the formation and storage in the body of triglyceride fat, and those which are antagonistic to this, which promote the mobilization of triglyceride fat and its breakdown to the easily combusted fatty acids and ketones. Both of these forces are operating all the time; and any weight gain or loss in an individual is determined by that one of these forces which is predominant. It is helpful to think of each of these two forces as a physiological situation in which various agents play their parts.

In the physiological situation which promotes fat storage, the leading role is played by carbohydrate. Now, the capacity of the tissues to oxidize carbohydrate is limited, as has been mentioned, with the result that greater or less amounts, when they have reached the pyruvic acid stage, are turned back to the liver. At the same time, carbohydrate stimulates the pancreas to an increased production of insulin. Insulin, acting on the pyruvic acid which has been returned to the liver, stimulates its conversion to fatty acid and then promotes the deposition of this, as fat, in the adipose tissues of the body. [11, 12] This is the fat storage mechanism, which operates normally in the body and is in operation continually. It can easily be seen, however, that great amounts of carbohydrate in the diet may so increase the activity of this fat storage mechanism that more fat will be deposited in the tissues than is being removed. No doubt, this mechanism has subserved the race in preparing for times of famine. In our day, such physiological preparation for a famine which never arrives, leads the way to obesity and all its attendant ills. Notable among these ills is the diabetic state, in which the fat storage mechanism finally fails.[13]

While overconsumption of carbohydrate appears to be the cause of obesity, it is not a simple matter to state what constitutes overconsumption in any individual case. It all depends on the capacity of a person's tissues to break down pyruvic acid. Many factors could conceivably affect this rather vulnerable enzymatic step in the oxidation of carbohydrate. Among them might be cited the influences of heredity, infection, pregnancy, surgical anesthesia, allergy and increasing age. We have no assurance that the ability to break down pyruvic acid is the same in all sorts and conditions of people. On the basis of clinical observations alone, I am willing to venture the statement that it is not the same and that, in some cases, a very small amount of carbohydrate in the diet will so overwhelm the capacity of the tissues to oxidize pyruvic acid that an individual will increase in weight even though the total caloric value of the diet would not seem excessive. Aiding and abetting the storage of fat in such a case would be a concomitant sensitivity of the insulin apparatus, with a greatly increased production of insulin. Even a rather small amount of carbohydrate could, therefore, constitute over-consumption of that substance. Thus, the cause of obesity becomes, in many cases, an inability to oxidize sugar and starch.

A person who lacks the ability to oxidize sugar and starch stores those dietary substances as fat instead of converting them to energy. Heat production in the body suffers, while the individual becomes obese. If, as is often the case, obesity prepares the way for diabetes and failure of the fat storage mechanism, ketones as well as carbohydrate are lost in the urine. This is an economic waste.

Turning our attention now to the physiological situation which promotes fat mobilization, we find that the leading role is played by the anterior pituitary fat-mobilizing principle.[14]

This is in constant operation. Some triglyceride fat in the adipose deposits of the body is continually being taken up by the blood and oxidized in the liver to ketone bodies, which the peripheral tissues combust readily.[9]

When a person maintains constant weight, whether he is fat or lean, there is a balance between the forces which are storing fat and those which are mobilizing it. It has been observed that many obese persons maintain their weight, yet eat very little.[25] Furthermore, the fat man uses some of the energy he produces to keep his fat alive.

When the objective is for a person to lose weight it is necessary to bring about the physiological situation in which the fat mobilizing process predominates over the fat storage process. The first essential in this is to hold the dietary content of carbohydrate well within the capacity of the tissues to oxidize the pyruvic acid which is formed from it. If this is done, all the carbohydrate ingested can be completely combusted to carbon dioxide and water. Restriction of carbohydrate also removes the stimulus from the insulin mechanism, so that the fat storing activity of insulin will be at a minimum. The anterior pituitary fat-mobilizing principle will then predominate over the fat storing forces. Fat will be mobilized from the adipose deposits of the body, oxidized to ketones in the liver and circulated to the tissues in this easily combustible form. By whatever dietary method reduction of obesity is accomplished, this normal mechanism of ketogenesis must be brought into play, for it has long been known that, while carbohydrate can be readily converted to fat in the body, fat can not be converted into carbohydrate in any significant amount.[15]

The physiological situation which promotes weight loss can be brought into play by complete starvation, which increases ketogenesis.[16] It can be done, also, in a hit or miss fashion, by low calorie diets, which are a form of semi-starvation. Some of the more rigorous low calorie diets practically amount to starvation.[17] Often, in treating obese patients by such a method it seems that the margin between safety and effectiveness is a very narrow one. In some cases it may well be questioned whether such a margin exists. Energy production in the body is quantitatively reduced, for there is no guarantee that adipose deposits will be mobilized on schedule to make up the deficit between the optimum energy requirement of the body and the lowered caloric intake. Indeed, it must be obvious to all who have dealt with the problem of obesity that patients adhering to low calorie diets are often weak and tired, while the weight chart shows that little or no adipose tissue is being mobilized and burned.

The safest and most effective method of weight reduction is to eliminate carbohydrate from the diet completely and to allow an *ad libitum* intake of protein and fat. The physiological situation which promotes fat mobilization is brought into play with great effectiveness by this means. Protein supplies the lipotropic factors necessary for the phospholipid turnover in the liver[18] and, through gluconeogenesis, the glycogen required by the nervous system. Ketogenesis is active, as it is in any method by which weight is reduced. If it happened that ketone bodies were formed in greater abundance than could be taken up by the tissues, they would be drawn off, harmlessly, in combination with ammonia, through the kidneys. The kidneys form ammonia from urea, and this is manufactured in plentiful amount through deamidization of protein by the liver.

When such a high protein, high fat diet

is used, it has been found advantageous to prescribe nine ounces of lean meat and three ounces of fat, cooked weight, at each of the three meals of the day, with the patient at liberty to take more, if he chooses, in that proportion—three parts of lean to one of fat. A loss of weight of twelve pounds a month is usually accomplished on such a regimen. When normal weight is reached, the weight loss stops.

A modified form of this diet, containing six ounces of lean meat and two of fat, or more in that proportion, at each of the three meals of the day, with the addition of an ordinary serving of one of the less concentrated carbohydrate foods, is effective in most cases. The weight loss, however, is usually slowed down to seven pounds a month. The sheet of instructions given to patients on such a diet is as follows:

A Diet For Obesity

With this diet you follow a definite routine which is as important as the diet itself. Have a regular hour for going to bed. Set your alarm clock for eight hours sleep, never a minute more than that, and allow time for a thirty minute walk before breakfast. It is not necessary to walk fast, but it is necessary to walk the full thirty minutes regularly.

Breakfast, lunch and dinner are all the same type. You eat three big meals a day and lose seven pounds of excess weight a month.

First course of each meal: One-half pound or more of fresh meat with the fat. This part of the diet is unlimited. You can eat as much as you want. The proper proportion is three parts lean to one part fat. Most of the meat you buy is not fat enough, so get extra beef kidney fat, slice and fry it to make up the proper proportion. Good meats are roast beef, steak, roast lamb, lamb chops, fresh pork and pork chops. Hamburger is all right if you grind it yourself just before it is cooked. Season the meat with black pepper before it is cooked or use paprika, celery seed, lemon, chopped parsley or celery tops, or other flavoring which does not contain salt.

Do not use the least particle of salt. Do not use foods containing salt, such as soup, bacon, smoked ham, canned chicken, canned fish, frankfurters, bologna, canned or spiced meat, or salted butter.

Second course of each meal: This part of the diet is limited. At each meal you have a choice of an ordinary portion of any one of the following:

White potatoes, boiled, or home fried.
Sweet potatoes
Boiled rice
Half grape-fruit
Bunch of grapes
Slice of melon
Banana or pear
Raspberries or blueberries

At the end of each meal have a cup of black coffee or clear tea without sugar. Do not use saccharine.

Be sure to drink six glasses of water every day before five o'clock. Your only other beverage is half a lemon in a glass of water.

Have a physical examination by your doctor before starting on the diet and have him check up at regular intervals. Weight must be regulated completely to normal before other foods can be added or you will quickly gain the weight you have lost. After the weight is normal you can test out how far you can depart from the diet without gaining weight.

Note particularly that this diet contains no bread, flour, salt, sugar, or alcohol.

A report of results in the use of these principles of weight reduction has been made.[19] Twenty overweight individuals lost an average of over 21 pounds each in an average time of three and a half months. A year later it has been found that the average weight gain since that loss has been less than two and a half pounds. All of these individuals are in good health at the present time.

The morning walk is essential in enabling a person to eat the requisite amount of fat. The entire success of the diet depends on eating enough fat. Otherwise, the patient would be on a mere low calorie diet, with all the disadvantages such a diet entails.

Meat fat is chosen because it is lower in cholesterol than other animal fats commonly used[20] and there appears to be less allergy to it than to vegetable fats. There are many advantages in a high fat diet which can not be enumerated here.[21,22] Fat is helpful in preventing gall bladder disease because it stimulates the gall bladder to complete emptying.[23] Fat has been suggested as useful in the treatment of atherosclerosis because it is a good solvent for cholesterol.[24]

One of the chief advantages of this diet is that it maintains energy production, for the tissues are supplied with the kind of fuel which they are best adapted to use and the only limitation on energy production is the very natural one of a person's appetite. This, it seems, is of significance in the present day, when we are greatly concerned with the metabolic derangements underlying the socalled degenerative diseases. There is much uncertainty and confusion as to what those metabolic derangements are and what can be done about them. Amid all this confusion, however, there is one basic and inescapable fact. Energy is needed for the successful operation of the multifold biochemical exchanges involved in metabolism, a term which Graham Lusk defined as "the flame of life." May I wish for you, gentlemen, that that flame may burn brightly and long.

SUMMARY

A review of the intermediary metabolism of carbohydrate and fat, as determined by biochemical investigations with tracer elements, indicates that carbohydrate should be severely restricted in weight reduction diets. Energy production should be maintained by a liberal intake of dietary fat in conjunction with protein. Details are given concerning such a diet, which has been used successfully for reduction of weight. The use of this diet as a means of preventing atherosclerosis and gall bladder disease is discussed.

REFERENCES

1. Schoenheimer, R.: The Dynamic State of Body Constituents. Cambridge: Harvard University Press, 1942.
2. Krebs, H. A.: The Intermediary Stages in the Biological Oxidation of Carbohydrate, Advances in Enzymology, 3: 191, 1943.
3. Baldwin, E.: Dynamic Aspects of Biochemistry. New York: Macmillan Company, 1947.
4. Olson, R. E., Pearson, O. H., Miller, O. N., and Stare, F. J.: J. Biol. Chem., 175: 489, 1948.
5. Olson, R. E., et al.: J. Biol. Chem. 175: 503, 1948.
6. Brobeck, J. R.: Metabolism and Nutrition. In Fulton's Textb. of Physiol. Philadelphia: W. B. Saunders Company, 1949.
7. Duncan: Diseases of Metabolism. Philadelphia: W. B. Saunders Company, 1947.
8. Weinhouse, S. et al: Abstracts Am. Chem. Soc. 114th Meeting 18C, Washington, Sept. 1948.
9. Stadie, W. C.: The Intermediary Metabolism of Fatty Acids, Physiol. Rev. 25: 295, 1945. Stadie, W. C.: J. Clin. Invest. 19: 843, 1940.
10. Quoted from: Bodansky, M.: Introd. to Physiol. Chem. London: Wiley and Sons, 1930.
11. Stetten, D. W. Jr. and Klein, B. V.: Studies in Carbohydrate Metabolism. VI Effects of Hypo- and Hyperinsulinism, J. Biol. Chem. 162: 377, 1946.
12. Bloch, K. and Kramer, W. J.: J. Biol. Chem 173: 811, 1948.
13. Stetten, D. Jr. and Klein, B.: J. Biol. Chem. 159: 593, 1945.
14. Barrett, J. M. et al: J. Physiol. 93: 367, 1938.
15. Olmsted, . M. D.: Claude Bernard, Physiologist. New York: Harper and Brothers, 1938.
16. Stadie, W. C.: J. Clin. Invest. 19: 843, 1940.
17. Goldzieher, M. A.: Am. J. Digest. Dis. 15: 289 (Sept.) 1948.
18. Artom, C. and Cornatzer, W. E.: J. Biol. Chem. 171: 779, 1947.
19. Pennington, A. W.: Indust. Med. 18: 259, 1949.
20. Twiss and Greene: J.A.M.A. 101: 1841, 1933.
21. Deuel, H. J. Jr.: Non-Caloric Functions of Fat in the Diet. Jour. Am. Diet. Assoc. 26: 255, 1950.
22. Eckstein, R. C.: Fat in Nutrition, J.A.M.A. 137: 1220, 1948.
23. Behrendt: Disease of the Gall Bladder. Philadelphia: F. A. Davis Company, 1948.
24. Stare, F. J.: Fat Emulsions for Intravenous Use. J.A.M.A. 142: 748, 1950.
25. Hutton, James H.: Obesity — Report on 800 Cases, Indust. Med. 18: 197, 1949.

DISCUSSION

DR. J. R. DURHAM, (Wilmington): Dr. Pennington has presented a most interesting and thought-provoking paper, and I believe this type of paper, dealing with a difficult problem which we have faced in our practice and which offers a new solution, should be encouraged. Here we have presented for us a new theory on the cause of obesity and its treatment. I want to congratulate Dr. Pennington for his temerity in presenting it, but I want to disagree with some of his conclusions, at least in part.

1. "The chemical energy of food we oxidize is ultimately accounted for as heat whether we accomplish physical work or not." Untrue. The energy for work does not appear as heat.

2. The implication that heat production is proportionate to the amount of food taken in cannot be accepted. Actually, on usual diet, the so-called specific dynamic effect from food amounts to 250 calories per 24 hour period, plus or minus 50 calories depending on meal size. Newburg and co-workers, after careful study of the total heat production, found no evidence that either the basal or total metabolism was stimulated by superalimentation.

3. Despite what Dr. Pennington says about calories, the simple principle—that obesity is invariably the result of a disproportion between the inflow and outflow of energy—remains unchallenged. Persons who ingest fewer calories than they produce lose weight. The human body does not violate the law of conservation of energy.

4. If some individuals have greater difficulty in oxidizing small amounts of carbohydrate, the carbohydrate would be excreted in the urine as sugar and not stored as fat.

5. The statement that many obese persons maintain their weight yet eat very little is certainly not accepted by authorities in metabolism. I refer you to the vast amount

of evidence published by the Sage Laboratories under the direction of Drs. Lusk and DuBois.

6. The author's contention, indeed the mainstay of the entire thesis, that fats are the preferred fuel of the tissues and that they are oxidized more readily than carbohydrate has—so far as I have been able to determine from my readings of Stadie, Newburg and others—no basis in clinical or experimental research.

7. The statement that the kidneys form ammonia from urea has never been shown to occur, despite repeated search for this by many investigators.

And now we come to a most important point. How many calories are ingested by the patients on Dr. Pennington's diet? If the modified diet of 6 ozs. of lean meat and 2 oz. of fat is used, something less than 1800 calories a day are supplied. This would cause anyone to lose weight. I hope Dr. Pennington will have an opportunity in the future to determine the actual caloric consumption of patients on this diet.

I will not say anything concerning the possible vitamin deficiency of this diet except that I do not think it is a serious criticism.

In the present state of our knowledge concerning atherosclerosis, I do not believe the fat diet can be recommended for the prevention of this degenerative process. In the same vein, a high protein diet can be harmful in the presence of any kidney involvement. Certainly a high protein diet would not be acceptable in a patient with any nephritic state.

In closing, let me say again that I am very interested in Dr. Pennington's presentation. I would like to see more data on the actual calories ingested. Perhaps a control setup with one group on Dr. Pennington's diet, with a measured or weighed diet, and another group, control group, on the same amount of calories but, let's say, on the common low calorie weight reducing program, can be studied. Perhaps the author has found a new approach to the problem of obesity, but it must be substantiated, and it must be based on sound physiological principles.

DR. L. B. FLINN, (Wilmington): Dr. Durham has mentioned that this is a most unusual approach in the way of a diet for obesity. Many of the statements which Dr. Pennington made seem to me quite sweeping and without sufficient foundation from an investigative source. I have not heard the paper before and cannot recall many of the statements which I would consider at least controversial.

From what knowledge I have of the carbohydrate metabolism, which has been largely from reading, it has been my impression that although carbohydrate can be metabolized and finally burnt and used in the form of pyruvic acid, or go through the carboxylic cycle, it is certainly not in accordance with Stettin's work considered to be the usual procedure. That is a method for combustion of carbohydrate which the body can call upon in times of need and stress.

The diet suggested certainly seems to me to have certain practical significance. I am sure patients on this diet do lose weight. I am not impressed that they lose more weight than other adequate low calorie diets.

The idea of a high protein diet is not new. Perhaps there is some advantage in a dynamic action of protein itself. All patients, I think, tend to lose weight on any low sodium, low salt diet. Hypertensive cases who are put on a low sodium diet, without any particular reference to protein, carbohydrate, or fat, lose weight.

I would suspect that any patient who is given a large amount of meat and meat fat, as much as he wants, soon finds he doesn't want a great deal. Most people cannot keep up a very large appetite for animal fat if it is thrown at them three times a day. So that, as Dr. Durham suggested, the end result of this diet, I would suspect, is really a fairly adequate low calorie diet with sufficient protein to provide energy and to provide easy carbohydrate stores when needed.

It is certainly an expensive diet, particularly in this day, which again would be one of its drawbacks.

There are many other details which are tempting to discuss but which would take too long today. I would like to say one more word, and I have previously mentioned this to Dr. Pennington, that even if we should assume that this is a good diet, and it may turn out to be such, I would like to say that I was most disappointed and shocked to see the display given this diet in *Holiday* magazine, representing the work of one of the most outstanding industrial medical departments in the country. I have always been very happily associated with the individuals in the medical department of the duPont Company, and I hope I still will. But I cannot conceive of any reason why such an organization would allow a splurge like what was displayed in *Holiday* magazine, and I'm certainly sorry that it occurred.

Dr. Pennington: I wish to compliment Dr. Durham and Dr. Flinn for their scientific detachment in reviewing a paper which opposes some widely held concepts; and I thank them for recognizing that this is a serious effort to help solve an urgent medical problem.

I think we are all in accord with the simple principle that obesity results from a disproportion between caloric intake and output. What I have attempted in this paper is to point out that within the framework of that simple principle are intricate matters which must be taken into account.

The two diets I have described contain upward of 2430 calories, according to the tables of the U. S. Department of Agriculture. The statement that people lose weight on such diets has aroused some amazement and, no doubt, some incredulity. I sympathize with that incredulity and offer to direct you to its cause.

We have all been indoctrinated with a simple, mechanistic formula which places complete faith in a term "caloric requirement." Ancel Keys, in the *J.A.M.A.* this year, pointed out that that term is used widely without clear definition. The "ideal caloric requirement" involves theory which may or may not be correct. The factorial method of estimating it is subject to error; and one matter involved is the accuracy of the BMR reading.

The term, "caloric requirement" is useful in estimating the amount of food necessary to keep a large population group alive, but it has little meaning in any individual case where a physician is trying to help an individual achieve optimum health. Keys has shown that the underfed organism conserves its expenditure. Everyone will not lose weight on 1500 calories, nor on 1100. The 450 calorie diets recommended by Evans and Strang will reduce practically everyone, but that is coming pretty close to starvation. Grafe, in his book, "Diseases of Metabolism", reports cases under close supervision on diets close to that level, who did not lose weight satisfactorily. Contrary to the claims of the low calorie school of thought, low calorie diets have failed under the most rigid experimental conditions. When, as in ordinary practice, the experimental conditions are less rigid, the claim is invariably made that the patient was not following his diet; and this claim is not made on the basis of knowledge. It is a predetermined opinion based on allegiance to a figment of a mechanistic imagination—namely "caloric requirement."

Those who find in this term a simple and final answer to all the problems of obesity save themselves a great deal of trouble. They need never investigate the effects of catalytic agents, enzyme inhibitors, or other variables. They need not consider the energy utilized in endothermal reactions which involve the synthesis of protoplasmic materials and which does not, therefore, figure immediately in calculations of energy output.

To conclude, the low caloric diets based on the principal of caloric requirements are crudely devised in the service of simplicity and must, eventually, go the way of the D/N ratio, a former mainstay of the same school of thought. There are fat people, plenty of them, who are actually starving.

(Ed. Note—See letter page 104)

CANCER OF THE LARYNGOPHARYNX*

Radical Surgical Resection Combined With Neck Dissection and Esophagoplasty

Preliminary Report

John F. Hynes, M. D.,
Wilmington, Del.

Extensive cancer involving both larynx and pharynx presents a difficult therapeutic problem to which there is as yet no satisfactory solution. The medical literature contains many reports of excellent results in the treatment of cancer of the intrinsic larynx: that is, cancer confined within the cartilagenous laryngeal box, whether by partial laryngectomy through laryngofissure, total laryngectomy, or radiation therapy. Reports of cancer involving both the larynx and the adjacent pharyngeal structures are fewer: they are the "inoperable cancers referred for palliative irradiation" by the surgeon, or are included by the radiologist in a series of cases of varying extent and anatomic location, from naso-pharynx and tonsil through base of tongue and larynx to pyriform sinuses and post-cricoid region. We propose to discuss the results obtained in the treatment of cancer involving the extrinsic larynx and/or pharynx, with particular reference to the advanced, "inoperable" extensive cancer involving both organs.

---

*From The Carpenter Memorial Clinic, Memorial Hospital, Wilmington, Delaware. Read before the Medical Society of Delaware, Dover, October 3, 1950.

It is almost axiomatic to classify cancer of the extrinsic larynx, especially when the pharynx is involved, as inoperable. (Nielsen[6], Quick[8] and others). Laryngologists who emphasize the curability of laryngeal cancer (80 to 90% in cancer confined to a vocal cord, 50-70% by total laryngectomy for more extensive laryngeal lesions) invariably refer to cancer of the intrinsic larynx. From some of the reports one would assume that such cases are three or four times as common as extrinsic laryngeal and/or pharyngeal cancer, yet other authors report the incidence of the two types to be about equal, and in our own series cancers involving both larynx and pharynx predominate. On the other hand, as Martin[5] has pointed out, radiologists reporting good results in the treatment of laryngeal cancer presumably have a larger proportion of limited lesions in their series. For example, in 1932 Coutard[2] reported from the Curie Institute 27% five year survivals in cancer of the tonsil, hypo-pharynx and larynx. Baclesse[1], reporting from the same institution in 1949, subdivides his cases into anatomic groups: he reports 6% five year survivals for cancer involving the hypopharynx.

The treatment of extensive cancer of the laryngo-pharynx has been the subject of relatively few reports in the surgical literature, particularly in this country. One of the best, that of Wookey[9,10] describes a satisfactory approach, a modification of which was employed in three of the four cases we have treated. Very recently Owen[7] reported 22 cases of pharyngo-laryngectomy with 4 (18%) five year survivors.

The anatomy of the pharynx and larynx must be reviewed for proper understanding of the therapeutic problem. The intrinsic larynx may be considered as the limited area from subglottic region to the vestibular bands; some authors include also the posterior aspect of the epiglottis. The extrinsic larynx is more loosely defined: it includes the epiglottis, aryepiglottic folds, and arytenoids, and usually the post-cricoid region, although the latter is really a part of the pharynx, lying at its junction with the esophagus. The posterior and lateral pharyngeal walls are obviously part of the pharynx. The pyriform sinus is also pharyngeal, but is bounded medially by the arytenoid and aryepiglottic fold. It is our experience that a majority of epilaryngeal cancers are also "epiesophageal": they involve the pharynx as well as the larynx. (Table 1)

This discussion of anatomy is of more than academic importance. It is apparent, both from our own results and the reports in the literature, that cancer involving the hypopharynx is seldom curable by radiation methods (in which it resembles its anatomic continuation, the esophagus). If, then, many if not most cancer of the extrinsic larynx involve also the hypopharynx, it explains the low curability of such cancers, as compared to intrinsic laryngeal cancer where radiation therapy is often very effective, according to Cutler[3], Lenz[4] and others. Furthermore, bulky cancers do not seem to do as well under radiation therapy as do limited lesions, and bulky, everting masses within the pharynx are characteristic of hypopharyngeal cancer.

Results of Radiation Therapy

Thirty-eight cases treated from 1935 to 1949 have been reviewed. One case who refused all treatment, one untreated terminal case, and one case seen only in consultation, were not considered in the series. (Table 1)

Ten cases were classified as confined to the extrinsic larynx, after careful study of the description on the record, yet five of these developed proven or presumptive evidence of recurrent cancer in the hypopharynx or cervical esophagus, while the larynx remained healed after treatment, which would suggest that pharyngeal involvement was present but unrecognized on their initial examination. One patient, aged 78, with a lesion only 1.5 cm. in diameter, confined to the superior aspect of the arytenoid, has survived six years following irradiation. One patient with recurrence two years after treatment survives an additional three years following total laryngectomy, and another recurrent one year after irradiation survives two years since laryngectomy. Nine of the ten cases must be classified as failures of radiation therapy.

Table 1

Results of Radiation Therapy 1935-1949

Anatomic location	Total cases	Five year Survival	Radiation Failure	Totally Inoperable	Operable By Radical Resection	Operated after Radiation Failure
Extrinsic, larynx only	10	1(a)	9	4	6	2(b)
Pharynx only	5	0	5	2	3	0
Larynx & Pharynx	23	0	20(c)	12	11	1(d)
	39	1	34	18	20	3

Five cases with primary disease limited to the pharynx were irradiated. None of these survived more than twenty-five months following treatment.

Twenty-three cases with extensive cancer involving both larynx and pharynx were irradiated. Three are living 3 years, 2 years, and 14 months respectively, apparently well, although the last patient may yet require surgical treatment. One other patient survives 15 months since his original treatment, but has recurrent disease. One other case had radical surgical resection, as described below, and died two later from other causes. There are no five year survivors. The single survivor reported above was one of 21 cases treated prior to 1945 (4.8%).

Results of Surgical Treatment

Three cases, not included in the radiation series, have had primary surgical treatment consisting of unilateral radical neck dissection and pharyngolaryngectomy. A skin flap from the side opposite the neck dissection was prepared at this operation and anchored to the stump of the pharynx above and the esophagus below. At a later stage a buried skin tube was completed in the manner described by Wookey, (9,10) and the raw surfaces covered by the skin graft (split thickness). Two of the patients have left the hospital with good swallowing function; the third is almost ready to leave, although his course has been delayed by technical difficulties in constructing the esophagoplasty since his resection also included the hyoid bone and base of tongue. The first radical resection was performed in a case recurrent after heavy irradiation and included practically the entire tongue, so no esophagoplasty was considered practical.

Operative Technic

Under procaine anesthesia a transverse incision at the level of the hyoid bone extends from the sternomastoid muscle on the uninvolved side to the mastoid process on the side chosen for neck dissection. A vertical incision, starting from this first incision at a point 4 to 5 cm. from the midline on the side of neck dissection, is continued downward almost to the clavicle. This incision is made parallel to the opposite sternomastoid (which represents the base of the flap used to repair the esophageal defect), hence it diverges obliquely outward from the vertical. A second transverse incision, passing 2 cm. above the suprasternal notch, extends from the lower end of the vertical incision to the sternomastoid of the uninvolved side.

The parallelogram of skin and platysma so outlined is dissected as far back as the sternomastoid muscle. The larynx is skeletonized by dividing and reflecting the strap muscles, and the isthmus of the thyroid is divided. The trachea is divided through the first or second ring. At this point an endotracheal

---

a) Small (1.5 cm.) non-infiltrating cancer of arytenoid.

b) Case No. 22, recurred 2 years after treatment, has survived 3 years since laryngectomy in 1947.

Case 30, recurred 1 year after treatment, has survived 2 years since laryngectomy in 1948.

c) Three cases are living without recurrence 3 years or less since treatment.

d) Case No. 33, had glosso-laryngo-pharyngectomy for recurrence and survived 2 years, dying without evidence of recurrent cancer.

tube is inserted and general anesthesia begun (sodium pentathol, nitrous oxide, oxygen is usually quite satisfactory).

Radical neck dissection is carried out on the side with palpable metastatic nodes (or on the side of the primary tumor when no definite nodes are palpable) by reflecting skin flaps above and laterally. The sternomastoid, internal jugular vein and all fatty areolar tissue down to the deep fascia, is removed from below upward. The common and internal carotid arteries, the vagus, phrenic and hypoglossal nerves, the cervical sympathetic trunk, and the thoracic duct on the left, should be preserved. High ligation of the internal jugular just below the jugular foramen is essential since a metastatic node is frequently found high on the posterior aspect of this vein. It is advantageous to ligate and divide the superior thyroid, lingual and external maxillary branches of the external carotid, or the external carotid itself, to facilitate subsequent dissection of the pharynx.

When the neck dissection is complete the upper cervical esophagus and hypopharynx are mobilized in the plane of the loose areolar tissue lying over the prevertebral fascia to a point well above the lesion. The pharynx may be opened laterally or anteriorly in the pre-epiglottic space. It is best to enter on the side of minimum involvement so that resection can be carried out under direct vision as well as palpation. It is permissible to determine the point of pharyngotomy by palpation through the mouth since salivary contamination is inevitable. The pharynx is divided 2 cm. above all visible and palpable tumor. If there is involvement of the vallecula or base of tongue, resection should include this area and the hyoid bone as well. Resection is completed by dividing the esophagus at least 2 cm. (more if feasible) below all palpable tumor.

The skin and platysma flap already prepared is drawn across the midline under moderate tension and anchored to the prevertebral fascia by multiple fine chromic sutures and/or silk or wire retention sutures tied over rubber tubing. The stump of the pharynx is drawn downward and that of the esophagus upward and anchored to the same fascia. The upper border of the skin flap is sutured to the mucosa of the posterior pharyngeal wall by fine silk or wire sutures and this suture is continued until the upper skin margin approximates the entire circumference of the pharyngeal orifice, forming a scroll with the skin inside and the platsyma exposed. Excess skin (if any) may be folded back on itself to cover part of the raw surface of the flap. A similar anastomosis of skin to esophageal mucosa is carried out below leaving a skin lined slot open along the entire lateral aspect.

The long skin flap on the side of neck dissection, which is based on the trapezius muscle, can sometimes be drawn medially to meet the skin edge of the plastic flap. This should not be attempted if any tension is necessary since the blood supply on this side is relatively poor following neck dissection and necrosis is almost inevitable. It is better to anchor this flap to the deep fascia just medial to the carotid, which should be protected, and to cover any remaining raw surface with split thickness grafts.

Prior to closure the permanent tracheostomy is formed by excising a circle of skin in the suprasternal notch and suturing the trachea in place with meticulous care as recommended by Martin[5]. The strap muscles may be imbricated behind the trachea for temporary support, or may be excised. Frequently part of the thyroid must be excised to facilitate closure. Finally, a feeding tube is passed through the nose, pharyngeal stoma and esophageal stoma to the stomach and a firm pressure dressing applied.

After four to six weeks the esophagoplasty may be completed by excising the vertical portion of the scar to mobilize the margin of the skin flap and making a second vertical incision to the opposite side of the midline. Skin is sutured to skin with multiple fine chromic sutures so as to close the lateral opening in the esophagoplasty. The raw surfaces are then covered by split thickness graft. In our experience it is best to delay this a few days to minimize the possibility of losing the graft from infection brought by salivary contamination. Nasal gavage feedings are continued for at least two weeks. If the wound seems well healed, swallowing is then permitted.

Case Report

J. D. CMC No. 5706; Memorial Hospital No. 86119.

A 61-year-old negro male was admitted 2-1-50 with a history of sore throat, earache, dysphagia and weight loss for 12 months. An emergency tracheostomy for severe dyspnoea was performed at the time of admission. Examination showed a bulky cancer involving the right lateral pharyngeal wall, pyriform sinus, arytenoid, aryepiglottic fold, epiglottis and ventricular band. A 2 cm. firm, movable node was palpable over the right carotid bulb. Biopsy from the larynx showed squamous cell carcinoma.

On 2-17-50, after preliminary transfusions and gavage feedings, a right radical neck dissection and excision en bloc of the hypopharynx, upper esophagus and larynx, with first stage esophagoplasty, was performed. The pathologist's report describes a bulky, fungating cancer of the hypopharynx invading the larynx and epiglottis. Two out of 37 cervical nodes examined contained metastatic squamous cancer. On 4-13-50 the esophagoplasty was completed and a split thickness graft applied a few days later. The patient was discharged about four weeks later, his recovery having been delayed by plebothrombosis and femoral ligation following his last operation. His health was good and his swallowing function quite satisfactory on 8-15-50.

Discussion

A review of the 38 cases treated by irradiation indicates that 18 cases must be classified as totally inoperable; 13 cases had fixed, metastatic nodes; 3 had bilateral metastatic nodes; indicating rapid dissemination of disease; 1 patient was too old and feeble to tolerate the operation; 1 patient had distant metastasis. It is believed that the remaining 20 cases might have been amenable to radical surgery of the type described above. Among these 20 cases, 2 had recurrence in the pharynx and upper cervical esophagus, 1 recurred in the base of the tongue, 2 in the thyroid gland, and 1 in the subglottic region. There were probably several other cases with extension to the upper esophagus which were not proven by biopsy or autopsy. All of these cases would fall within the scope of the operation described.

Summary

(1) The anatomy of the larynx and pharynx is reviewed.

(2) Extensive laryngeal cancer usually involves the hypopharynx as well.

(3) Cancer of the hypopharynx rarely is curable by radiation therapy.

(4) A series of advanced laryngeal and/or pharyngeal cancer cases treated by radiation therapy is reported. Of 21 cases treated up to 1945 there is one survivor.

(5) Resection of the larynx, pharynx and cervical esophagus, and if necessary base of tongue, combined with a unilateral radical neck dissection is described.

(6) The reconstruction of the cervical esophagus by skin flaps satisfactorily restores swallowing function.

(7) Four cases of combined resection of the pharynx and larynx with radical neck dissection, three of which were suitable for esophagoplasty, are reported.

REFERENCES

1. Baclesse, Francois: Radiation Therapy in Cancer of the Hypopharynx, J.A.M.A. 140: 525-529 (June 11) 1949.
2. Coutard, Henri: Roentgen Therapy of Epitheliomas of the Tonsillar Region, Hypopharynx and Larynx from 1920 to 1926, Am. J. Roent. 28: 313-331 (Sept.) 1932.
3. Cutler, Max: Cancer of Larynx, J.A.M.A. 142: 957-962 (April) 1950.
4. Lenz, Maurice: Roentgen Therapy in Cancer of the Larynx, J.A.M.A. 134: 117-121 (May 10) 1947.
5. Martin, Hayes: Cancer of the Larynx, in Nelson's Loose Leaf Surgery, 1947 Nose & Throat Vol. 12, pp. 431-505.
6. Nielsen, Jens: Roentgen Therapy of Cancer of the Larynx, Acta Radiol. 23: 180-208; 255-266, 1942.
7. Owen, R. D.: The Problem of Hypopharyngeal Carcinoma, Proc. Royal Soc. Med. (Section of Laryngology) 43: 157-170 (March) 1950.
8. Quick, Douglas: Treatment of Laryngeal Cancer by Irradiation, Am. J. Roent. 46; 11-20, 1941.
9. Wookey, Harold: The Surgical Treatment of Carcinoma of the Pharynx and Upper Esophagus, S. G. & O. 75: 499-506, 1942.
10. Wookey, Harold: The Surgical Treatment of Carcinoma of the Hypopharynx and Esophagus, Brit. Jour. Surg. 35: 249-266, 1948.

Discussion

Dr. W. M. Pierson (Wilmington): Dr. Hynes has given you a very pessimistic and discouraging prognosis regarding neoplastic diseases of the hypopharynx and extrinsic larynx as treated by radiation therapy. He has also outlined an operation which, it is to be hoped, will obtain cures for this type of disease.

It has not been so long ago since cancer of the esophagus in any location was considered inoperable. However, today carcinoma of the esophagus may be operated upon and is operated upon successfully continually. Dr.

Hynes has undertaken an operation that is painstaking, time-consuming, requires skill and patience, and he is certainly to be commended for his efforts.

As he mentioned, there are very few reports in the literature relative to surgery for neoplastic diseases of these locations. For the most part, a diagnosis of such a lesion is immediately considered inoperable and are referred for radiation therapy. However, what we are after is a cure, even though it may mean sacrificing a part of the anatomy. The patient desires to live as long as possible, and if surgery obtains a cure, then that is what we are after.

Surgery today is successful beyond other days not only because of improvement in technique but also because of the blood bank, of penicillin, of improved anesthesia technique, and in addition, the realization of the importance of the patient being in tip-top shape before operation. The intimation that the patient should have radiation therapy rather than surgical treatment because of lack of proper conditioning is no longer tenable because it is just as important to have these patients in tip-top shape for radiation therapy as it is for surgery. Perhaps many could stand surgery better than they could radiation therapy.

As in cancer in any other location, an early diagnosis is important if we are to obtain cures. Cancer in the locations under discussion is usually visible by direct inspection, or if not by direct inspection by mirror examination, and certainly by direct examination with the esophagoscope. So that a patient presenting symptoms should be investigated completely for an early diagnosis, before the tumor becomes bulky, and when one is more apt to obtain a cure.

The patient Dr. Hynes showed had a very visible tumor that can be seen by merely using a tongue depressor. It was very large.

I congratulate Dr. Hynes on his work; he should be highly commended. He has undertaken a difficult job, and I hope it means cures for some of these patients.

Dr. H. S. Rafal (Wilmington): It has been a privilege to hear Dr. Hynes' report on the results he has obtained on the achievements over cancer by x-ray surgery. It is difficult to be the second discussant in a subject that is so limited, but there are certain factors that might be mentioned.

X-ray therapy has much that is to be desired, and it will probably be agreed that it may take a good many years before the results of this operation can be properly evaluated. I certainly feel that it is still justifiable, because the only other outlet we have, radiation therapy, has certainly left proof that there is more to be desired.

One point that we might hope for is that some new technique of x-ray therapy, or some modification of an old technique, might be developed to produce results which would be so good that we would be very glad to forego this back-breaking job that this operation entails. For example, by rotation of the x-ray therapy, where the patient rotates around the tube, results have been obtained in carcinoma of the esophagus which compare quite favorably with that of radical surgery and which are far better than those obtained previously with conventional x-ray methods. Whether or not this will concur with this particular instance I don't know, but it is something we can keep in mind and at least hope for in the future.

As was readily seen from the diagram and discussion, and description of the operation, it is quite a formidable procedure. It is done on older patients because these tumors occur most commonly in older persons. However, as mentioned by the previous two speakers, modern anesthetic techniques and antibiotics, and liberal use of transfusions, and I think more than anything else, religious attention to details in the preoperative, operative and postoperative phases of the surgical therapy, give us a chance for low mortality in this operation.

We saw here what the technical difficulties were. There was mention that there were weeks of unpleasant work of keeping these things clean and irrigating them out, sucking them out, and keeping the patients going until the reconstructive phase is reached.

I would like to mention briefly a few technical aspects of this. I may be all wrong, but as far as I know, Dr. Hynes in this operation has included in the scope of the procedure a unilateral radical neck dissection. To my knowledge, this part of the operation has not been incorporated in previous attempts, such as by Dr. Wilkie. I think it is of considerable importance, as Dr. Hynes described it. The tumor had been found in several of the nodes of the dissection, which of course indicates that the operation was necessary, even though perhaps the nodes are not palpable on physical examination. The primary tumor and the lymph nodes should be removed. That would necessitate a bilateral neck dissection. As Dr. Hynes mentioned, this is a treacherous thing to undertake. He has been content with one side.

It is also important to keep in mind that this is at least in part a plastic procedure. That quadrangular flap carries a great deal of responsibility for the success of the operation. It must be handled with kid gloves. The hemostasis must be done with fuss-budget care, and constant vigilance must be maintained at the time of operation to prevent excessive drying of that flap. Also when the flap is brought across to start the first stage closing, certainly all will agree that you must resist very rigidly the temptation to pull just a little bit more, because it is a flap whose blood supply is quite tenuous and even a slightly excessive tension might produce necrosis and set you back weeks in the reconstruction of the pharynx.

It is of course important to get coverage of the carotid artery. It has been reported, and I have had one such personal experience, where mycotic granuloma has led to fatal hemorrhage, and if not to that, often necessitates ligation of the carotid artery, which in an elderly patient such as this is attended by a high mortality rate.

I have one suggestion that has come to mind, and I am certain it has occurred to Dr. Hynes too, where we might borrow a leaf from the book of men who have had extensive experience with surgery of the esophagus, such as Dr. George Pack. In the operating room, before starting to close, microscopic examination of sections taken from the proximate and distal ends of the incized sections be taken immediately so that the surgeon may know with some degree of certainty whether or not he has transected microscopic tumor.

One point, again mentioned by Dr. Hynes, is the problem in hairy individuals of having a beard growing within the new pharynx. Whether or not that would interfere with swallowing has not been the experience in these cases. I believe Wilkie has made a point of it, and he has advocated depilitating doses of x-rays.

DR. HYNES: I have very little to add. I want to thank the discussants for their very kind words. I think they exaggerated.

I don't know what the effect of the hair turned in on a skin flap will be. I talked to and have written to several men who have had experience with the operation. I have heard of one case becoming obstructed from a long gray beard, but most of them say nothing seems to happen. Maybe the hair follicles atrophy when they are closed into a moist dark space; I don't know. I have read somewhere that the dermal grafts used to prepare hernia lose their hair follicles. They all seem to dry up and atrophy. I hope that is what happens to these fellows. If it doesn't, we can give them x-ray treatments to depilate them. Wilkie gives them an epilation dose of x-ray before operating. I think that is risky. I think it is possible to work out a different type of closure, using a split graft, instead of a skin flap, but that hasn't been tried on this sort of case, so I will have to withhold any comments on that point.

With the minimal case of tuberculosis, diagnosis is rarely the clear-cut matter it is in more active, progressive, and advanced cases. It may involve, frequently, the most tedious follow-up and most painstaking analysis and evaluation. These are the lesions which, under normal circumstances, rarely get the doctor's care because of their obscurity and elusiveness—those which may be forever the "silent" lesions in tuberculosis. —Robert J. Anderson, M. D., Journal-Lancet, April, 1950.

SPONTANEOUS HEMOPNEUMOTHORAX*

New Concepts in Treatment

Gerald A. Beatty, M. D.,
and
Robert W. Frelick, M. D.,
Wilmington, Del.

A review of the experience in the treatment of spontaneous hemopneumothorax on the Chest Service of the Memorial Hospital during the last three years has demonstrated some important features. While spontaneous pneumothorax is relatively common it is not usually complicated by hemorrhage. In a recent review of the subject in the *Annals of Internal Medicine* for September, 1950 by Arst, Lahey, and Kunkel, it was noted that only 60 cases had been reported through 1947.

In 1949 Dorset and Terry[2] reviewed 54 cases and found 14 to be fatal. Most of these died during the course of the first twenty-four hours. In most of the cases the source of bleeding was found in torn pleural adhesions.

In 1942 Hartzell[3] advised that thoracentesis was inadvisable except for diagnosis or for the relief of mediastinal displacement. It was thought that rapid and complete removal of the blood without air replacement was likely to result in renewed bleeding. The withholding of transfusions was advised except in extreme emergency in order that fresh bleeding would not be initiated. The late results of hemopneumothorax were not considered. The work with traumatic hemothorax during the recent war changed the concepts of handling blood in the thoracic cavity, but this concept apparently has not been completely accepted in the medical management of spontaneous hemopneumothorax. Moore[4] felt that the method of choice was complete aspiration as soon as possible and that the injection of air would be contraindicated. It was noted that bleeding in the chest wall could not be controlled by maintaining a pneumothorax and that bleeding of the lung tends to cease spontaneously because of the low pressure in the pulmonary circulation. The incidence of chronic hemothorax and empyema was found to be higher in those patients treated by aspiration and air replacement than in those treated by aspiration alone, during the war. Yet as recently as 1949 Dorset and Terry[2] conservatively suggested that in the first few critical days no more than 200 to 500cc. of blood should be removed and then it should be partially replaced by air. In none of the earlier literature is much stress made of the late complications of hemopneumothorax. In 1949 Nalls and Matthews[5] did suggest that decortication might be necessary in some cases in which the lung cannot fully expand because of clotted blood and a resulting fibrothorax after hemopneumothorax. However, some cases have been reported in which there was no limitation of pulmonary expansion following a hemopneumothorax in spite of the fact that no blood had been aspirated. Nalls and Matthews's case in which a decortication was done did have a good result but the patient had a prolonged and protracted hospital course.

In 1947 the problem of massive spontaneous hemopneumothorax was previously reported from this hospital[6]. In the reported case the bleeding was severe enough to require 4000cc. of blood by transfusion in the first five days in order to control shock and anemia. During the first nine days over 6000cc. of bloody pleural fluid was removed from the right chest. The patient was acutely ill and on several occasions appeared to be in immediate danger. In spite of frequent aspirations of blood, clots did develop in the thoracic cavity and a month after the initial hemopneumothorax it was necessary to decorticate the lung. This patient's course was also protracted and his life seemed to be in jeopardy on several occasions because of the initial management.

In view of these considerations the following is thought to be worthy of detailed discussion:

A thirty-three year old white man was admitted to the Memorial Hospital with a chief complaint of severe pain in the left chest, beneath the scapula. The duration of pain was two hours and it was worse on respiration and on movement of the trunk. The pain began at work when the patient turned around on his desk chair. Almost immediately he had dyspnea and became pale and shocked. For three days previously he had had a cough productive of thick sputum. He had remained at home a couple of days and had returned to work the day of admission, in spite of some continued cough.

---

*From the Chest Service of the Memorial Hospital.

Examination on admission showed a very apprehensive patient in acute distress, with labored respirations (rate 28), and with intense chest pain upon any movement of the body. The temperature was 98.6, blood pressure 150/102, and the pulse 92. Chest expansion was limited on the left. No heart sounds were heard over the left chest. Cardiac dullness was percussed two cm. lateral to the right sternal border. The percussion note was tympanitic in the left posterior chest and axilla, with bronchovesicular breath sounds in the right chest. The trachea was questionably shifted to the right. Laboratory work showed RBC. of 5.26; Hb. 15 gms., WBC. 22,000, with 90% segmenters; and normal urine. The chest x-ray revealed a complete pneumothorax in the left chest, with a small amount of fluid present at the left base. The heart was shifted to the right.

About an hour after admission the patient's general condition had become worse with more marked dyspnea and cyanosis. His chest was aspirated at the left base and blood was obtained. None was removed. A needle was then placed in the fourth interspace along the anterior axillary line, because his symptoms were felt to be due to a tension pneumothorax. There was an immediate rush of hissing air upon insertion of the needle which was then attached by rubber tubing to an underwater seal at the side of the bed. The dyspnea and cyanosis improved. In addition to the thoracentesis sedation was given and chemotherapy was started. During the evening of the first day the patient continued to complain of pain on coughing. He was nauseated and vomited several times.

During the morning of the second day blood began to go into the trap bottle when he coughed. X-rays revealed increased fluid in the chest. In the afternoon, even though 500cc. of blood was aspirated, a re-check film showed progressive increase in the fluid. In addition, the drainage bottle was filled with several hundred cubic centimeters of blood. The patient's red blood count dropped to 4.20, with 12.5 gm. of hemoglobin. At 8:30 p. m. 700cc. more of dark red blood was removed, with some relief of the increasing dyspnea. The pain remained around the left shoulder, and analgesics were needed. In spite of blood loss, the patient showed no signs of real shock but he was becoming weaker and his pulse was rapid (around 116) and at times quite weak. Sixty mgm. of vitamin K was given intravenously, empirically, in an effort to control the bleeding.

On the third day the patient was still weaker. His dyspnea and orthopnea were a little more marked. X-rays showed increased fluid in the chest. The blood count in the morning remained about the same. The patient was coughing up some grayish sputum, examination of which showed micrococcus catarrhalis and non-hemolytic streptococcus. Smear was negative for acid-fast organisms. The first blood transfusion of 500cc. was given. The red blood count several hours later was 3.78, with Hb. of 12.5 gms. The pulse continued to be rapid. The patient was perspiring and cool and was felt to be in borderline shock. Plasma was started late in the afternoon. Further laboratory studies by this time showed a coagulation time of six minutes, bleeding time of one minute, and a prothrombin time of 95%. A repeat chest film in the evening and a RBC. of 3.32, with 10 gm. of Hb. confirmed the clinical impression of continued bleeding in the left chest. 1500cc. of blood was then removed, and shortly thereafter the patient was taken to the operating room, where an exploratory thoracotomy was done.

The left lung was found to be completely collapsed with a large amount of jelly-like clotted blood in the chest. (Note — This had been suspected by the roentgenologist preoperatively.) Oozing of blood was present from adhesions in the apex and the left costophrenic angle. Although the oozing was considerable no active bleeding points were seen. There were adhesions between the base of the lung and the parietal pleura. Repeated expansions of the lung under direct vision failed to reveal any other source of bleeding or any air leak. At the apex there was a small protrusion of lung tissue through the visceral pleura but no definite leak was demonstrated from this point. The bleeding was controlled by ligatures to the adhesions and by the use of multiple gelfoam packs. The herniated bit of lung was inverted beneath a row of sutures. An intercostal catheter was introduced into the thoracic cavity through the ninth interspace at the anterior axillary line. Reexpansion of the lung before closure of the chest wall revealed no areas of leakage. The drainage tube was attached to an underwater drainage system guarded by a negative pressure bottle and by a third bottle to which positive pressure was applied in order to create negative pressure within the left thoracic space.

The patient tolerated the procedure well and was given 1000cc. of blood during the operation. His postoperative course was smooth from the beginning. He maintained his blood pressure. His respiratory movements were good and he had a moderate cough. Breath sounds came through well in the left chest. Because of a continued depression of the RBC. to 3.36 with 9.5 gm. of Hb., he was given 500cc. more of blood on the first postoperative day. A platelet count at this time was reported to be 70,000, but a subsequent clot retraction time of one and a half hours was normal. Later the platelet count increased to 100,000. Postoperative x-rays in the first few days after the thoracotomy showed a complete removal of all the hemothorax material and complete inflation of the left lung.

On the second postoperative day the patient coughed up moderate amounts of grayish black sputum. His temperature reached a peak of 101 degrees. The tube was removed from the chest and he was allowed out of bed with no ill effects.

Re-check x-rays on the third postoperative day showed almost as good airation in the left as in the right lung. The diaphragm was elevated on the left. 500cc. more blood was given, since his RBC remained around 3.16, with 8.5 gm. of Hb.

By the fourth postoperative day he was eating his meals out of bed and walking about the hall. A slight cough continued, but sputum examination again was negative for acid-fast organisms. Culture showed N-catarrhalis and one-hemolytic streptococci.

The patient's course continued favorable and he was finally discharged on the ninth postoperative day, in good condition. An x-ray taken at that time showed the left lung to be completely inflated with a costophrenic angle that was fairly clear. There was no parenchymal infiltration.

The patient returned to work within another week or two and since that time has remained asymptomatic.

Discussion

This thirty three year old man was acutely ill for the first few days. He showed no evidence of improvement with the routine conservative management. His hemorrhage was massive and continued until the time of operation on the third day after admission. Although the bleeding may have been poorly controlled because of a low platelet count, this did not lead to postoperative bleeding. The bleeding was from torn pleural adhesions. (This agrees with the previous evidence concerning the cause of bleeding in some other cases of spontaneous hemopneumothorax). By a relatively simple exploratory thoracotomy the bleeding points were controlled. The use of gelfoam gauze was of undoubted value. Clots had already formed and would have hindered re-expansion of the lung even if the bleeding had been under control. A subsequent thoracotomy for decortication might have been necessary. Thus, in this case our patient was not only spared the possible dangers of uncontrolled hemorrhage but he was saved a long hospital stay, including a subsequent operation. As it was, he left the hospital twelve days after admission in a good state of health and nutrition.

In addition to the cited example, two other cases seen on the Chest Service of the Memorial Hospital emphasize the importance of proper management of hemopneumothorax. One was a twenty-six year old man who had been originally treated conservatively elsewhere for spontaneous hemopneumothorax. He was subsequently referred to the Chest Service because of left anterior chest pain and dyspnea. His original x-rays showed that his pneumothorax was complicated by only minimal bleeding, which was not aspirated. Thoracotomy revealed a fibrin membrane holding the left lower lobe in complete collapse. The lower lobe was decorticated and re-expanded. The outcome was satisfactory. This case points out that even a small amount of bleeding may lead to complications necessitating subsequent thoracotomy for decortication. This is notable because some authors have maintained that aspiration of the blood is not always necessary.

The other patient was a thirty-two year old man with tuberculosis who had massive bleeding following pneumonolysis of adhesions for collapse therapy. He was treated conservatively by aspirations of over 2500cc. of bloody fluid from the chest and by transfusions of 2500cc. of whole blood within five days. His general nutrition and resistance were impaired by the experience and the tuberculosis later spread to the other side. Subsequent decortication and right upper lobectomy were done in an attempt to control his disease. He died after seven months of illness. Perhaps he might have fared better with an immediate surgical attack on the pleural hemorrhage while his general condition was relatively good.

Since that time several other cases have been explored because of massive bleeding at the time of a spontaneous hemopneumothorax. The operations have all been successful. Several cases have also been treated conservatively by means of aspiration. The cases chosen for thoracotomy are those in which bleeding does not appear to show signs of stopping within the first twenty-four to forty-eight hours, and in whom the bleeding is severe enough to demand frequent blood transfusions to counteract a tendency towards shock.

The first reported case in the literature of spontaneous hemopneumothorax treated by thoracotomy appeared in the March, 1951 *Annals of Surgery*[7] This patient too had an uneventful, uncomplicated recovery.

We initially felt that thoracotomy might well be the treatment of choice for almost all cases of hemopneumothorax, even though the initial bleeding was not too severe, in order to obviate the necessity for a subsequent decortication and the associated prolonged hospitalization. These ideas have now somewhat changed as the result of the use of streptokinase and streptodornase[8] to help prevent clot formation in the chest.

While the reported cases of spontaneous hemopneumothorax are rare, inferences from various articles and personal communications with other institutions would suggest that the condition is far more frequent than one would think from the literature. In other words, any doctor may be called upon to direct the therapy in such an emergency. The proper management should be well known. The reported mortality rate of 25% indicates the seriousness of the condition as treated by previously recommended methods.

SUMMARY

A case of spontaneous hemopneumothorax in a 33-year-old man is presented. The patient had massive bleeding which was not being controlled by conservative management. Therefore, a thoracotomy was done with subsequent expansion of the lung and arrest of the bleeding. The postoperative course was short and uneventful. The case was compared with two others who were similarly very sick during the phase of hemorrhage, but who were treated conservatively and suffered prolonged illnesses and eventual pulmonary decortication. A fourth case was noted of hemopneumothorax following pneunolysis for tuberculosis with long hospitalization under conservative therapy, subsequent operations, and eventual death.

In view of the cases mentioned, a revision of the standard therapy for spontaneous hemopneumothorax has been recommended.

CONCLUSIONS

Our conclusions are that in cases of spontaneous hemopneumothorax careful consideration should be gven to

1. Treatment of shock and transfusions.
2. Early aspiration of blood and air. The latter is especially important in cases of tension pneumothorax.
3. Frequent x-rays, with aspirations as deemed necessary by x-rays and the clinical findings.
4. Exploratory thoracotomy in cases of massive bleeding which is poorly controlled by conservative measures.
5. Early decortication if conservative procedures have not been successful in producing

pulmonary expansion. These conservative procedures should include the use of streptokinase and streptodornase. These drugs may add to the initial bleeding tendency, however, if given too early and should be used with caution.

REFERENCES

1. Arst, D. B., Lahey, W. J. and Kunkel, P.: Spontaneous Hemopneumothorax, Ann. Int. Med. 33: 718, 1950.
2. Dorset, V. J. and Terry, L. T.: Spontaneous Hemopneumothorax with Recovery, Am. J. Med. 6: 135, 1949.
3. Hartzell, H. C.: Spontaneous Hemopneumothorax—Report of Three Cases and Review of the Literature, Ann. Int. Med. 17: 496, 1942.
4. Moore, R. L.: War Injuries of the Chest, Ann. Surg. 124: 367, 1946.
5. Nalls, W. L. and Matthews, J.: Idiopathic Hemopneumothorax—An Evaluation of Its Treatment and Report of Three Cases, Dis. of Chest 15: 612, 1949.
6. Harrington, L. and Frelick, R. W.: Spontaneous Hemopneumothorax, Del. St. Med. Jour. 19: 179, 1947.
7. Myer, R. T., Johnston, F. R., and Branshaw, H. H.: Spontaneous Hemopneumothorax: Report of a Case Treated by Thoracotomy, Ann. Surg. 133: 413, 1951.
8. Tillett: Personal communication.

RIGHT UPPER MEDIASTINAL LESION*

Paul A. Shaw, M. D.,
Wilmington, Del.

The diagnostic problems handled by a Chest Group are frequently answered by extension of usual diagnostic procedures to a finality of completeness and a careful correlation of information so that a satisfactory therapeutic answer is obtained for the benefit of the patient. Diagnosis of the right upper mediastinal lesion does not fall in the above category and therefore requires special procedures for definitive information for accurate therapeutic application.

The right upper mediastinal lesion is usually a space-occupying mass situated above the right main bronchus. It protrudes from the right side of the normal mediastinal shadow and may extend upward to the clavicle or above it. The medial border of this type of lesion is confluent with the mediastinal shadow and does not show a demarcation from the lung. A pulmonary lesion of small size may be moved away from its mediastinal conjunction by artificial pneumothorax and thus be demonstrated to be entirely pulmonary in significance. Many of these lesions are not amenable to this simple procedure, however, and require special efforts in diagnosis.

This case report is made to describe the use of vascular opacification in an attempt to clarify the diagnosis of a right upper mediastinal mass.

The patient was a 57-year-old male of good

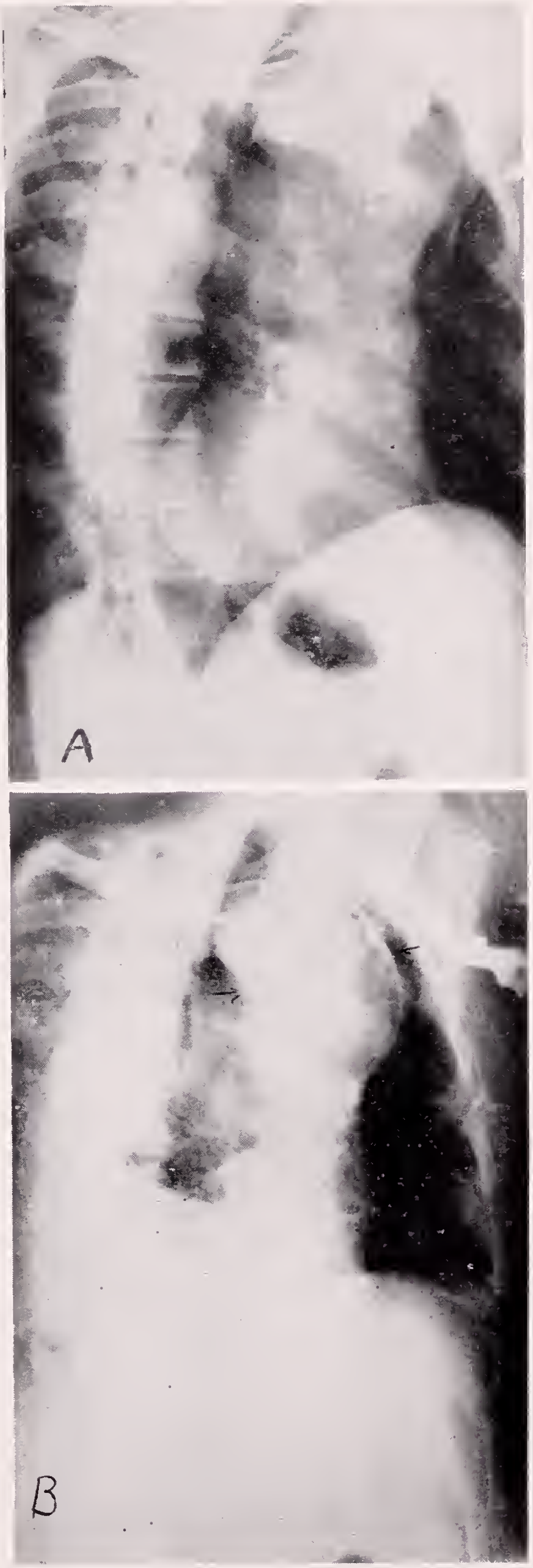


Fig. 1. A—Oblique view before opocificotion.
B—Inominote oneurysm after opocificotion.

---

*From the Radiological Department, Memorial Hospital.

muscular development and apparent good health. A lesion in his larynx had been demonstrated by biopsy to be a malignant papilloma near the right vocal cord. The x-ray examination of the chest showed a large lesion in the right upper mediastinum, 6x10 cm. The density was almost equivalent to the density of the mediastinal shadow and its location was compatible with the usual pathologic entities to be found in this area. This lesion was considered to be an aneurysm by the examining radiologist in his differential diagnostic outline. The usual procedures of multiplane projections, fluoroscopy, barium swallowing, and the like, did not give definitive diagnostic criterea sufficient to be of absolute value in the determination of therapy.

Vascular opacification was decided upon as a necessary examination in this individual. Contra-indications to the method chosen were ruled out (severe renal or hepatic disease). Technical methods were decided upon and practice dry runs were made by the technical staff of the x-ray Department of Memorial Hospital.

The method chosen was first evolved by Sossman and his group. It allows visualization of vascular structures in a fair degree of accuracy using equipment available in most hospital x-ray departments. In this case report an attempt will be made to outline the clinical approach to this problem of vascular opacification to demonstrate an aneurysm.

TECHNIQUE

The clinical examination of this patient revealed a positive serology and a positive biopsy of a laryngeal lesion. A diagnosis of accurate degree was needed of the chest lesion, to evaluate therapy, on the basis of:

1. Carcinoma of larynx
   Lues
   Luetic aneurysm of inominate artery
2. Carcinoma of larynx
   Carcinoma, primary or metastatic in chest
   Lues

The first step in the procedure was a determination of circulation time:

1. Arm to lung, by ether
2. Arm to tongue, by decholin

These tests were done in the usual manner and the results were:

1. Arm to lung, 15 secs.
2. Arm to tongue, 43 secs.

The arm to lung time was satisfactory, but the arm to tongue time was considered to be abnormally prolonged. Discussion elicited the fact that the patient did not appreciate the decholin taste promptly and a correction was made to 35 secs. (It was not feasible to repeat the decholin time because of previous time schedules in the Department). It was decided that a preliminary taste test should be done with decholin so that a patient could recognize the taste at once. (In a more recent case this preliminary taste testing was very effective). A rough calculation for the taking time of the first film is 25 per cent less than the decholin time, to show the left side of the heart. To show the aorta, the inominate artery, and the descending aorta this time was extended to 20 per cent less than the decholin time. These corrected times were then:

1. Arm to lung, 15 secs.
2. Arm to tongue, 35 secs.
3. Arm to inominate artery, 28 secs.

The second step in the preparatory procedure was an intradermal test with diodrast. Since this test is for allergy, diodrast in thirty-five percent dilution was used. The test was negative.

The actual examination was carried out in the X-ray Department. The patient was seated in front of a stereo-cassette changer. Two films were taken as survey or test films. The position of the patient is important and should be predicated on the location of the lesion. The patient faced the film obliquely with the left chest in contact with the film changer, roughly on an angle of fifty degrees. The right arm was extended to allow intravenous injection. The patient's body was retained in a secure upright position by an eighteen inch wide binder, firmly affixed to the film changer. Test showed that two exposed films could be secured in 0.75 seconds. X-ray technical exposure factors varied but little from usual technique. Fast exposure by fast Bucky apparatus was utilized but is probably not necessary.

Intravenous injection was prepared by Dr. Marvin Dorph, Resident in Medicine at Memorial Hospital. Fifty ml. of 70% diodrast were drawn into a 50 cc. syringe. A 12 gauge needle was to be used on the syringe. At this time a pulse check was made on the patient. An elevation to 120 was noted. The pulse rate at rest was 74-78. The increase was considered to be due to excitement. The increased pulse rate required a correction in the arm to inominate time, previously calculated of 28 secs. A correction of three seconds was made because of the pulse acceleration giving an arm to inominate time of 25 secs.

In the trial runs a counting procedure was evolved, starting with 25 seconds, and using 0 second as the time at which the dye would be in the aneurysm. At 5 seconds before zero the x-ray tube was energized; at 4 seconds the "hold breath" command was given. At one second the first exposure was made and at 0 second, plus one, the second exposure was made. Dr. Dorph was able to inject 50 ml. of diodrast in 1.68 seconds through the 12 gauge needle. The time count was started 1.5 seconds after injection was started.

Two good exposures were secured. The position of the patient made the arch of the aorta parallel with the film plane. The inominate artery was not obscured by the spine shadow and clearest visualization was secured as planned.

Opacification of the mass was evident and the diagnosis of inominate aneurysm was confirmed. This procedure should be considered as vascular opacification and not as angiocardiography . The time sequence is the most important factor. The usual equipment, such as was used in this case, can be used to show the left heart (ventricle), the thoracic aorta, and the abdominal aorta, with sufficient accuracy to make the examination worth the experience to the patient. Right heart angiocardiography does need electrocardiographic control of the timing sequence.

This report is a record of an attempt to differentiate right upper mediastinal lesions, when a vascular abnormality is the primary presumptive diagnosis. The procedure uses equipment found in any hospital X-ray Department. The effect on the patient can be calculated and be made safe by proper precaution. Two good opacified films can be secured to compare with previously taken nonopacified films.

PRIMARY HEPATOMA

Case Report and Brief Discussion of the Disease

Alan Iddles, M. D.,
Wilmington, Del.

Primary carcinoma of the liver is a rather rare disease and it is thought that a discussion of it and presentation of an illustrative case may be of interest to the profession, as this disease is probably not commonly considered in differential diagnosis of liver lesions, and indeed in this case it was not suspected until found at autopsy.

Case Report

The patient, a 47-year-old, single, negro male, was admitted to the Memorial Hospital on September 25, 1950, complaining of severe para-umbilical burning pain radiating to the epigastrium. The patient was never able to give a completely adequate history, apparently because of impairment of his mental faculties from his severe illness. Nothing relevant was found in his family history or past history except that he had had a previous admission in August, 1948, complaining of shortness of breath for five years and "spitting up blood" for one year. A bronchoscopy was done at that time and the discharge diagnosis was acute suppurative bronchitis.

For about one year prior to the present admission the patient had intermittent, short, crampy, abdominal pains, not localized, and relieved by taking soda, food, or vomiting. He also repeated the history of spitting up blood (whether coughed up or vomited could not be ascertained). For about one week before admission he had right upper quadrant burning pain, which sometimes radiated to his right shoulder. Once during that last week he thought that he vomited a small amount of blood. He gave a rather vague history of a sharp blow to the right upper quadrant of the abdomen on the day before admission. On the morning of admission he was seized with a severe para-umbilical burning pain radiating to the epigastrium and he then came to the Accident Ward.

There was no history of jaundice, dark urine, abnormal stools, change in bowel habit, weight loss, fever, or alcoholism. Physical examination revealed the patient to be in shock, with cold, damp skin, no blood pressure obtainable, pulse 120, and rather marked pallor of the mucous membranes. There was no jaundice. The tongue and mouth were crusted with dried blood. The heart and lungs were essentially normal. In the abdomen no organs or masses were palpable, but there was moderate tenderness in the epigastrium and the right upper quadrant. Rectal examination showed only slight enlargement of the prostate. The physical examination was otherwise negative.

The impressions on admission were hemorrhage from a peptic ulcer, perforated ulcer, or cholecystitis.

Laboratory tests showed a hemoglobin of 8.5 grams, red blood count 2.9 million, white blood count 9,600, with 85% neutrophiles and 15% lymphocytes. Urine analysis was negative. Blood urea nitrogen was 37. Gastric analysis showed an average amount of hydrochloric acid and there was coffee-ground material in the aspirate but no red blood. Electrocardiogram was negative. X-rays of chest and abdomen gave evidence of right subdiaphragmatic abscess, inflammatory reaction at the base of the right lung, and elevation of the right diaphragm.

The shock was controlled with transfusions, but the patient's abdomen became distended, peristalsis disappeared, pain continued, and the temperature, which was normal on admission, rose to 103° on the third day. A Levine tube was passed and the patient started on penicillin and streptomycin. There was no improvement, so on the fifth day the right subdiaphragmatic area was explored extraperitoneally. A large amount of bright red blood was found, and on inadvertently opening the peritoneal cavity, thin bloody fluid was encountered. The liver appeared grossly to be in the end stage of cirrhosis. No bleeding point was found and there was no evidence of pus, so the wound was packed with gauze and left open. The patient remained in poor condition, and on the third post-operative day the abdomen was clinically filled with fluid and a paracentesis revealed bright red blood. After a transitory improvement, the patient became worse, developing more abdominal distention and profound shock. In spite of transfusions, he died on the thirteenth post-operative day.

The pertinent autopsy findings are as follows: There were about 500 cc. of thin bloody fluid in the right chest. The lungs showed congestion, edema, atelectasis, and bronchopneumonia. There was a massive hemoperitoneum. The mesenteric lymph nodes showed hyperplasia. There were esophageal varices which probably accounted for the history of vomiting blood. The spleen showed moderate hyperplasia and weighed 340 grams. The liver was brownish-yellow, weighed 1,500 grams, was of average size, and was composed of small nodules of liver tissue with connective tissue septa between. The substance was everywhere very soft, particularly in the upper part of the right lobe beneath the diaphragm, where there was a large area of hemorrhage and liquefaction necrosis, presumably the site of the patient's fatal hemorrhage. The gallbladder was negative save for a large calculus.

The important microscopic findings were in the liver and lungs. The liver showed severe portal cirrhosis, and in the necrotic area, there were scattered islands of atypical liver cells with many giant and multinucleated forms and mitotic figures. These bundles of cells infiltrated the liver substance and in some areas showed marked necrosis. The appearance was that of a primary hepatoma. In addition to the findings described in the gross, the lungs showed small deposits of metastatic tumor with tumor cells scattered through blood vessels. Cause of death: Primary hepatoma, with secondary massive hemorrhage.

Discussion

Incidence. Primary carcinoma of the liver is quite common in certain races in Africa and the Orient, but rather rare in Europe and America. This difference is environmental rather than racial, because members of oriental and negro races residing in America do not show any higher incidence of the disease than is found in the rest of the population.

The incidence in America is about 2% of all carcinomas and it definitely parallels the incidence of cirrhosis of the liver, the higher incidence in other parts of the world being associated with a higher incidence of cirrhosis.

Liver carcinoma occurs predominantly in males from 40-60 years of age in this country, the ratio of males to females being variously estimated at from 2:1 to 12:1.

From 3 to 6% of cirrhotic livers contain primary carcinoma, and of the two types found, it is said that 90% of hepatomas and 50% of cholangiomas arise in livers with cirrhosis, although some investigators are of the opinion that cholangiomas are infrequently associated with cirrhosis. Hepatomas outnumber cholangiomas by a ratio of 6:1 in adults, and in the rare cases which occur in children, almost all are hepatomas. In children the disease is rarely associated with cirrhosis and it usually occurs before the end of the second year of life.

Diagnosis. The symptoms and signs are not diagnostic, but usually consist of a progressive, constant, aching pain in the right hypochondrium, weakness, anorexia, weight loss, moderate leukocytosis, secondary anemia, and irregular fever. If cirrhosis is present, all the manifestations of this disease may be found and may confuse the picture. Aspiration biopsy of the liver may be very helpful in establishing the diagnosis. Jaundice may be present if there is biliary obstruction from metastatic lymph nodes or if biliary cirrhosis is present. The liver may be enlarged and nodules may be palpated in it. The spleen may be enlarged or normal.

Differential Diagnosis. A listing, without details of differentiation, of other conditions to be ruled out is as follows: Portal or biliary cirrhosis, gallbladder disease with or without common duct stone, secondary tumor metastatic to liver, hepatic abscess, echinococcus cyst, benign liver tumor, and sarcoma of liver.

Gross Pathology. The liver may or may not be enlarged, depending on the degree of cirrhosis and the duration and rate of growth of the tumor. There is usually the typical nodular conformation of portal cirrhosis and, in addition, small or large, grayish-red, soft, hemorrhagic and partially necrotic tumor nodules are commonly seen, although gross differentiation from cirrhosis may be impossible. Sharply outlined tumor nodules are often seen in the larger branches of the portal and hepatic veins. Three gross types are described: (1) scattered tumor nodules throughout the liver, the commonest type; (2) the massive type with one large tumor nodule surrounded by a few smaller ones; and (3) diffuse nodulation, often grossly indistinguishable from cirrhosis.

The tendency toward necrosis probably accounts for the fever and leukocytosis, and the pain may be caused by distension of the liver capsule and pressure on surrounding organs.

Microscopic Pathology. The liver cell type, or hepatoma, is composed of clusters and cords of atypical liver cells with a trabecular structure. Many giant and multinucleated forms and numerous mitoses are seen. The cytoplasm is granular and acidophilic and may contain bile.

The bile duct type, or cholangioma, is identical to carcinoma of the extrahepatic biliary system and is an adenocarcinoma composed of columnar cells. Bile is often seen in the lumina, but not usually in the cytoplasm.

Gradations between these two types occur, in which one or the other of the types may predominate.

An academic question arises as to whether liver carcinoma is of unicentric or multicentric origin, some investigators believing that the disease arises at one focus and spreads throughout the liver by way of the hepatic and portal veins, and others maintaining that the carcinoma may arise in multiple areas throughout the liver simultaneously.

Metastases. The common sites for metastases are to the regional lymph nodes, lungs, and tracheobronchial lymph nodes. Direct spread by continuous growth along the hepatic vein, into the inferior vena cava and even up into the right auricle is also encountered.

Treatment. The treatment is very unsatisfactory due to the usually advanced stage of the disease when symptoms first occur, but surgery is occasionally of some value in apparently localized lesions. In none of the publications referred to in preparation of this paper was there any mention of the use of radiation or chemotherapy in the treatment of this disease, but it would seem that these measures might give some palliation.

Prognosis. This is almost hopeless, almost all patients dying within six months from the onset of symptoms. Death is usually due to failure of liver function to which an associated cirrhosis probably contributes to a great degree, but it is not uncommon for death to occur from massive hemorrhage, as in the patient cited above. Among fourteen apparently operable cases collected by Charache from the literature only one survived for more than five years following operation.

REFERENCES

1. Moore, R. A.: Textbook of Pathology. Philadelphia: W. B. Saunders Company, 1944.

1. Cecil, R. L.: Textbook of Medicine. Philadelphia: W. B. Saunders Company, 1947.

3. Willis: Pathology of Tumors. St. Louis: C. V. Mosby Company, 1948.

4. Ackerman and Regato, Cancer. St. Louis: C. V. Mosby Company, 1947.

Delaware Blue Cross

In 1950, our payments for the Hospital Plan totalled $1,657,197.46. Our payments for the Surgical Plan totalled $1,313,327.93. Blue Cross covered 20,644 in-patient hospital cases totalling 160,157 days of care; and 7,076 out-patient cases. Of the hospital cases paid for in 1950—46% were for surgery; 32% were for medical care; and 22% were for maternity care.

U. of P. Dinner

The University of Pennsylvania Medical Alumni Society will hold a dinner meeting Wednesday, June 13, 1951 at Haddon Hall in Atlantic City, in connection with the convention of the American Medical Association. Cocktails 5:30 p. m., dinner at 6:30 p. m. All alumni attending the convention are urged to come to the dinner. Tickets will be on sale Monday and Tuesday at the University of Pennsylvania Alumni Society booth at the entrance to the exhibit hall in Convention Hall.

"Federalese"

A Program—Any assignment that can't be completed by one phone call.

Channels—The trail left by an interoffice memo.

Status Quo—This mess we're in.

To Expedite—To confound confusion with commotion.

Liaison Officer—A person who talks well and listens better, but has no authority to make a definite statement.

To Activate—To make carbons and add names to the memorandum.

Under Consideration—Never heard of it.

Under Active Consideration—We're looking in the files for it.

Conference—A place where conversation is substituted for the dreariness of labor and the loneliness of thought.

Modification of Policy—A complete reversal which nobody admits.

To Spell Out—To break big hunks of gobbledygook down into little hunks of globbledygook.

A Survey is Being Made on This—We need more time to think of an answer.

Further Substantiating Data Necessary—We've lost your stuff. Send it again.

Confidential Memorandum—There wasn't time to mimeograph this.

"See Me," or "Let's Discuss"—Come down to my office. I'm lonesome.

Referred for Appropriate Action—Maybe your office knows what to do with this.

To Give Someone the Picture—A long, confused and inaccurate statement to a newcomer.

Jerry Klutz—*Washington Post*

We Are Tops

This will interest you — our Plan is 'one of the comparatively small number of Plans which were able to meet in full the requirements of the Approval Standards as revised late in 1950' by the Blue Cross Commission. Deepwater Plant—N. J. Plan.

Editorials

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building

Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place

M. A. Tarumianz, M. D. .... Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 23 April, 1951 No. 4

The Period of Gestation

In the press of April 9, 1951 appeared the following item:

> **CHILD IS BORN AFTER 11-MONTH PREGNANCY**
>
> NORRISTOWN, Pa., April 9 (AP).—Doctors at Sacred Heart Hospital yesterday disclosed that a woman had given birth there after a pregnancy of 11 months.
>
> It was one of the rare medical cases of a pregnancy exceeding 300 days in contrast to the normal 280-day period.
>
> The child, a boy, was born April 3 to Mrs. Grace Cartwright, 33, wife of Charles Cartwright, an employe of the circulation department of the Philadelphia Inquirer. The infant weighed eight pounds, three ounces.

This obstetrical anomaly is not new. Williams, in 1909 cited two cases of his own that "did not fall into labor till considerably over eleven months after the last period." Williams also cited Winckel's careful studies showing "that in very exceptional instances pregnancy may last as long as 336 days."

However, such anomalies as these frequently find their way into the divorce courts. Below, we quote the most recent article on this subject, from the London *Lancet,* of December 30, 1950:

> Medicine and the Law
>
> **THE COURTS AND THE PERIOD OF GESTATION**
>
> Within limits carefully defined in legal textbooks our courts confess judicial knowledge of certain simple facts of nature without requiring them to be proved by evidence. In Preston-Jones v. Preston-Jones,[1] decided in the House of Lords on Dec. 14, Lord Simonds observed that it had never been doubted that the court had judicial knowledge of the normal period of human gestation.
>
> The normal period, it seems, has been variously stated; it was taken, for example, as 270-275 days in 1887 (Bosvile v. Att. Gen.) and as 273-278 days in 1889 (Burnaby v. Bailie). Subsequent litigation has taught the judges something about abnormal periods. In the Gaskill case in 1921 Lord Birkenhead held that a period of 331 days could not be regarded as impossible in the then state of medical knowledge. In Wood v. Wood, where there was no medical evidence, the Divisional Court took the same view of a period of 346 days. Early in 1949 the Divorce Court allowed even 349 days to be a possibility (Hadlum v. Hadlum[2]). As the number of days continued to rise, the judges clearly found it necessary to draw the line somewhere. In the recent Preston-Jones case the figure of 360 was in effect (though the judges were not unanimous) declared to be on the wrong side of the line.
>
> Mr. and Mrs. Preston-Jones were married in April, 1941; a daughter was born a year later. On Aug. 13, 1946, a second child was born. The husband petitioned for divorce in the following November. He contended that this second child had been conceived between Aug. 29, 1945, and Feb. 13, 1946. During the whole of that time he was absent from the United Kingdom while his wife remained here. He alleged that it was not his child and that its conception was the result of an act of adultery. The divorce commissioner dismissed the husband's petition. The Court of Appeal ordered a re-hearing. The case being reopened, Mr. Commissioner Blanco White found that the husband had been absent from the United Kingdom between Aug. 17, 1945, and Feb. 9, 1946. The wife had suggested that her husband had visited her in the intervening November, but this the commissioner did not accept. He further found that the birth of the child (which weighed 8¼ lb.) was apparently normal and that it could not have been begotten as the result of marital intercourse on or after Feb. 9, 1946, the date on which the husband arrived home. The commissioner had then to ask himself whether the fact that at least 360 days had elapsed between the last possible intercourse between husband and wife and the birth of the child, together with the

medical evidence, put it beyond reasonable doubt that it was not the husband's child. The commissioner, who apparently found the medical evidence inconclusive, held that he would not be justified in finding that the wife had committed adultery; he dismissed the petition. Once more the husband appealed and once more the Court of Appeal directed a re-hearing; it might, it seems, have granted the husband a decree outright, had there not been some question of the admission of certain correspondence at the trial.

By a majority of four to one the House of Lords has now allowed the husband's final appeal and has remitted the case to the High Court in order that the proper decree may be granted.

There remains, however, a further problem of judicial knowledge or ignorance in cases of this kind. By the normal period of gestation the courts mean the time between conception (the union of the male and female cells) and birth. Recent cases have caused the judges to consider the possible interval between coitus and fertilisation. In the Gaskill case it was suggested that this latter interval might be so long as 21 days; in the Hadlum case one of 14 days was referred to. In M.T. v. M.T., in the latter part of 1949, when the divorce judge refused to accept the possibility of a normal healthy baby being born after an interval of 340 days between coitus and birth, a gynaecologist had stated in evidence that he had never heard of an authentic instance of an interval of 21 days between coitus and fertilisation. Lord Simonds asks if judges can, without evidence, take note of the possibility of some such interval. Can they, without evidence, he asks, refuse to entertain the possibility of a 30-day, or 90-day interval between coitus and conception? He thought that ordinary men and women would regard it as a fantastic suggestion that a normal child born 360 days after the last intercourse between husband and wife could be the child of the husband. "It is to me repugnant," said Lord Simonds, "that a court of justice should be so little in accord with the common notions of mankind that it should require evidence to displace fantastic suggestions." In the Preston-Jones case the only medical evidence was that of a doctor whose training and everyday working practice must have made him familiar with the ordinary problems of gestation and birth. This witness admittedly had not studied the problem of the maximum period from the time of coitus to the time of the impregnation of the ovum; but his earlier answers showed that he regarded as impossible an interval which would defer a normal child's birth until 360 days after coitus. The doctor was, in Lord Simonds's opinion, entitled to give that evidence "as a matter of competent medical opinion" even though he had made no special study of the subject. The divorce commissioner was not justified in disregarding the doctor's evidence. He was, as a matter of judicial knowledge, entitled to know that there were abnormal cases of gestation as well as a normal period; but he was not entitled to set his own view of possible abnormality, whether derived from the reported legal decisions or from other sources, against the evidence which he had heard. Having found the facts as stated, the commissioner should have acted on the medical evidence and should have granted a decree of divorce.

E. I. duPont de Nemours & Company
Wilmington, Delaware

April 17, 1951

To the Editor:

In connection with the discussion of Dr. Pennington's article on obesity, Dr. Lewis Flinn has taken occasion to criticize this Company on grounds which are not in accord with the facts. In the interest of fairness and accuracy, if you decide to publish Dr. Flinn's statements in their present form, it is respectfully requested that you add an editorial note correcting the false implication made.

The article in Holiday was not, as is implied, a news release by this organization. The Curtis Publishing Company had gathered some data outside and had decided to publish the article on diet when they first approached us. We had no latitude to "allow" it or otherwise. As you know, an editor may publish whatever he sees fit, and all anyone can do about it is to present facts which may help counteract inaccurate information which the editor has received elsewhere. The style in which an article is written is a matter of editorial policy entirely.

It seems Dr. Flinn must be aware that we have in this country a free press. His statements in the discussion do not seem to be in accord with such an awareness on his part, and it is difficult to understand what motivated him to make them. That is his own responsibility however, and I am merely writing to you as an editor who, I have every reason to believe, is interested in fairness and accuracy.

Yours very truly
MEDICAL DIVISION
G. H. Gehrmann, M. D., Med. Dir.
Allan J. Fleming, M. D.
Asst. Medical Director.

Boys Club Week

The Boys Clubs of America will again be sponsoring their national "Week." More than 300,000 youngsters find good fun and wise leadership at some 325 Boys Clubs across the country, many of which receive support through Red Feather campaigns. Call or write Howard Tooley, 381 Fourth Avenue, New York City, MU 4-7187.

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 5

MAY, 1951

Per Copy, 50c
Per Year, $4.00

THE PRESENT STATUS OF ANTIBIOTIC THERAPY*

DAVID A. COOPER, M. D.,**
Philadelphia, Pa.

The discovery and development of chemotherapeutic and antibiotic substances in the past decade represents perhaps the most dramatic period of progress in medicine. Today it is hard to realize that ten years ago there were no antibiotics while today practically all of the infections commonly encountered are amenable to treatment with chemotherapeutic agents. This field is dynamic. There are new substances being discovered and developed almost from day to day and we are gaining more knowledge of their use and limitations. There are so many antibiotic substances available today that it is at times difficult to select the proper agent and dosage for a given patient. Five years ago for practical purposes there was only one effective antibiotic, namely penicillin; today there are at least eight. These antibiotics include in the order of their discovery and use: tyrothricin, penicillin, streptomycin, bacitracin, polyyxin, aureomycin, chloramphenicol (chloromycetin), neomycin, and most recently terramycin. All of these substances have a wide range of antibacterial activity and because of this fact there has been a tendency to neglect a careful bacteriological study in most instances. This, in my opinion, has been the cause for failure in treatment in a number of patients. In any consideration of antibiotic or chemotherapy the importance of cultural demonstration of the etiologic agents and determination of its sensitivity to the various agents cannot be too strongly stressed. A recent case demonstrates this point.

The patient was a white female of thirty known to have had an old pulmonary tuberculosis that was considered arrested. She was delivered at the Lying-In Hospital on September 3rd, 1950 and was said to have had some respiratory difficulty after delivery but was apparently well enough to be discharged on her tenth day postpartum. A few days after discharge she was found to have fever and complained of pain in her chest and abdomen and was treaeted by her family physician with penicillin for five days without effect. She was admitted to the Pennsylvania Hospital ten days ago at which time she had signs of a subphrenic and pelvic abscess. Her old tuberculous lesion had apparently remained quiescent. Her penicillin was continued and streptomycin was added. It was thought that her continued fever was due to her abscesses. However, after drainage of her pelvic abscess she continued to run a spiking fever. When her cultures from her abscess were reported and sensitivity studies done, it was found that her organisms were resistant to penicillin and only slightly sensitive to streptomycin but highly sensitive to aureomycin. On switching her over to aureomycin there was a prompt febrile response. This example could be duplicated many times.

Even though these antibiotics have a wide range of antibacterial activity certain patterns of activity for the different antibiotics is well established, based not only on in vivo and in vitro experiments but based on clinical trial. For example it is quite clear that penicillin exerts its action in a most powerful way against gram positive cocci, against traponemal infections and against gonococci. It either has no effect or a very feeble effect against all gram negative bacilli. Streptomycin on the other hand has a striking effect against the tubercle bacillus and against many gram negative bacilli. Its effect against the treponemata and against gram positive micro-organisms is much less than penicillin. It is for this reason that streptomycin or dihydrostreptomycin are used almost exclusively for the treatment of tuberculosis and sensitive gram negative bacilli. It is a striking fact that neither penicillin or streptomycin has any effect upon the common virus infections nor upon Rickettsial infections. In the case of aureomycin and chloramphenicol the action of these drugs is different from either penicillin or streptomycin in that they have an effect on Rickettsial infections and some virus diseases as well as on bacterial diseases and amebiasis. Terramycin, the newest addition to the field has about the same range of activity against the infectious agents as aureomycin but requires a somewhat larger dosage. This substance has been in use not more than a year and therefore statements about it must be considered tentative. These latter antibiotics have considerable in common. First, their range of activity is fairly comparable. Secondly, they have good absorption from the gastro-intestinal tract which makes oral administration practical. Thirdly, they have a low degree of toxicity. Fourth, the action of these is primarily bacteriostatic in contrast to penicillin which is bactericidal.

---

*Read before the Medical Society of Delaware, Dover, October 3, 1950.

**Associate Professor of Medicine, University of Pennsylvania.

With the discovery of each new antibiotic additional diseases are brought under control and the number of antibiotics that are effective against the common infections is increasing. This gives us more than one weapon to use against a given infection which is important because we know that some strains of organisms are resistant or develop resistance to any of the antibiotics. To fail to recognize this lack or loss of sensitivity may lead to tragic results. Whereas an appreciation of it and a change of antibiotics will lead to the control of the infection. Based on past experience we assume that certain organisms are sensitive to a specific antibiotic. We cannot be certain of this prior to actual treatment unless the organisms are actually tested for its sensitivity. This should be done whenever practical but when facilities are not available, the clinical response can be taken as the best guide to the sensitivity of the organisms involved.

The antibiotic bacitracin is produced from a strain of bacillus subtilis. It has the same general bacterial spectrum as penicillin, that is to say it is more active against gram positive organisms than against gram negative bacilli. Organisms that are resistant to penicillin may be sensitive to bacitracin. Bacitracin has been used most extensively in the treatment of mixed infections of wounds after penicillin and streptomycin have failed to bring the infection under control, when bacitracin is given by mouth amebiasis can be controlled, and it is effective in pneumonococcic and lobar pneumonia when given parenterally. However, there is considerable evidence of its nephrotoxicity, hence it is reserved mostly for local use. Polymyxin is not a pure substance but it is highly specific against gram negative bacterial infections. So far it is the most powerful agent against some strains of bacillus pyocyaneus. Most of this material has been proven to be nephrotoxic which has limited its use and value.

The indications of the antibiotics in common use today can best be presented by the following charts:

Infection	Penicillin	Streptomycin	Aureomycin	Chloramphenicol	Terramycin
Streptococcal					
B-haemolytic	I	II	II	III	U
a-haemolytic	I	II	II	..	U
Non-haemolytic	I	..	II	..	U
All enterococci	II	..	I	..	U
Staphylococcal	II	..	I	..	III
Pneumococcal	I	III	II	..	III
Neisserian:					
N. meningitidis	I	..	II	III	U
N. gonorrhoeoe	I	II	III	III	III
Diphtheritic	I Antitoxin	..	..	..	U

Tuberculous	..	I P.A.S.	..	..	..
Anthrax	I	..	I	..	U
Clostridial					
Gas-gangrene	I	..	U	U	U
Tetanus	?	..	..	..	..
Gram-negative bacillary:					
Bact. coli	..	II	I	I	II
Bact. pneumonioe	..	II	I	I	II
Proteus	..	I	..	..	U
Bact. aerogenes	..	II	I	I	U
Ps. aeruginosa	..	II (Polymyxin is best)			

I—First choice III—Third choice U—Unknown
II—Second choice .. —No value

Infection	Penicillin	Streptomycin	Aureomycin	Chlor amphenicol	Terramycin
Salmonelli	..	..	..	I	..
S. typhi					
others	..	?	?	?	?
Shigella	..	..	I	I	U
Pasteurelia					
P. pestis	..	I-S.D.	U	U	U
Brucella					
Bact. tularense	..	..	I	I	U
Br. melitensis	..	II-S.D.	I	I	U
Br. suis	..	II-S.D.	I	I	U
Br. abortus	..	II-S.D.	I	I	U
Listerella	..	..	I	U	U
Cholera	..	..	U	U	U
Haemophilus					
H. influenzae meningitis	..	III-S.D.	I-S.D.	II-S.D.	U
H. pertussis	..	?	?	?	U
H. ducreyi	..	II	I	I	U

I—First choice III—Third choice S.D.—Sulphadiazine
II—Second choice .. —No value U—Unknown

Infection	Penicillin	Streptomycin	Aureomycin	Chlor amphenicol	Terramycin
Spirochaetal:					
Treponema pallidum	I	..	II	II	II
T. pertenue	I	..	U	U	U
T. carateum	I	..	U	U	U
Bacillus recurrentis	I	..	U	U	U
B. vincenti	I	..	U	U	U
Leptospira icterohoemorrhagioe	?	..	U	U	U
Donovania granulomatosis	..	II	I	I	U
Bartonella	..	..	U	I	U
Streptobacillary	..	I	U	U	U
Bacteroidosis	.	II	I	U	U

Rickettsial					
R. prowazeki	..	..	I	I	U
R. mooseri	..	..	I	I	I
R. rickettsi	..	..	I	I	U
R. conori	..	..	I	I	U
R. akari	..	..	I	I	U
R. tsutsugamushi	..	..	I	I	I
R. burneti	..	..	I	I	U

I—First choice U—Unknown
II—Second choice .. —No value

Infection	Penicillin	Streptomycin	Aureomycin	Chlor amphenicol	Terramycin
Viral:					
Psittacosis	II-S. D.	..	I	I	U
Lymphogranuloma venereum	II-S.D.	..	I	I	U
Primary atypical pneumonia	..	..	I	I	U
Herpes simplex	..	..	?	U	U
Herpes zoster	..	..	I	I	U
Chickenpox	..	..	U	U	U
Vaccinia disseminata	..	..	I	U	U
Smallpox	..	..	U	U	U
Measles	..	..	U	U	U
Mumps	..	..	..	..	U
Infectious mononucleosis	..	..	..	..	U
Epidemic hepatitis	..	..	U	U	U
Epidemic keratoconjunctivitis	..	..	?	U	U
Poliomyelitis	..	..	..	..	..
Influenza	..	..	..	..	..
The common cold	..	..	..	..	..
Parasitic:					
Acute amoebic dysentery	..	..	I	U	U
Fungal:					
Actinomycosis	I-S.D.	..	U	U	U
Trichomonas vaginalis	..	..	I I locally	U	U

I—First choice U—Unknown S.D.—Sulphadiazine
II—Second choice .. —No value

Infection	Penicillin	Streptomycin	Aureomycin	Chloramphenicol
Severe staphylococcal	I	..	I	..
Subacute bacterial endocarditis:				
a-haem. strep.	I	..	I	..
Enterococcal	I	I	I	..
Gram-negative	..	I	I	I
Staphylococcal	I	..	I	..
Acute bacterial endocarditis:				
B-haem. strep.	I	..	I	..
Pneumococcal	I	..	I	..
Meningitis:				
Pneumococcal	I	..	I	..
Staphylococcal	I	..	I	..
Gram-negative	..	I	I	I

Infection or condition	Penicillin	Streptomycin	Aureomycin	Chloramphenicol
Cholera	..	..	U	U
Gonorrhoea	I	U	U	U
Syphilis	I	..	..	..
Haem. Streptococcus	I	..	II	U
Meningococcal meningitis	I	..	U	U
Puerperal sepsis	II	..	I	U
Rheumatic fever	I	..	U	U
Subacute bacterial endocarditis	I	..	II	U
"Clean" surgery	I	..	I	U
Colonic surgery	..	I P.O.-S.S.	I	II
Pulmonary surgery	II	III	I	II
Established surgical infections	I°	II°	I°	I°
Extraction of teeth	I	U	II	U

I—First choice
II—Second choice
U—Unknown
S.S.—Sulfasuxidine
P.O.—Per os
°—As indicated
.. —No value

Dosage. Penicillin, because of its bactericidal effect remains the antibiotic of choice in its field of activity. Procaine penicillin G, 300,000 units, fortified or unfortified, with 100,000 units, of crysticillin potassium penicillin every 12 to 24 hours, intramuscularly is the preparation and method of choice and is effective in virtually all infections caused by penicillin sensitive organisms. There are, however, a few instances, particularly in endocarditis with resistant organisms, where the sodium or potassium salts, of crysticillin penicillin are preferable. Oral penicillin using sodium or potassium salt is effective in most infections but by large is not effective as parenteral use.

Streptomycin and dihydrostreptomycin will be discussed later under the therapy of tuberculosis.

Aureomycin, chloramphenicol and terramycin, all three substances have pretty much the same range of effectiveness and are given predominately by the oral route; they can be considered together. Aureomycin is used in one to four grams daily, divided into four doses, and chloromycetin and terramycin, two to six grams daily, in divided doses, varying somewhat on the severity of the infection and the presence or absence of toxic manifestations. Since these substances are bacteriostatic and not bactericidal, the period of treatment should be considered somewhat longer than in the case of penicillin.

Synergistic Effects. This entire problem of the synergistic action of two or more antibiotics is far from being settled. Experimentally it has been demonstrated that penicillin and bacitracin have a synergistic effect in rabbitt syphilis. Also it has been shown that penicillin and streptomycin have a synergistic effect against strains of enterococcus in some patients with subacute bacterial endocarditis due to enterococcus, recovery has been recorded following the use of both penicillin and streptomycin, after penicillin alone has failed. On the other hand, penicillin and chloramycetin has the opposite effect, namely, that the full action of penicillin was not demonstrated when chloromycetin was added to the culture medium. Here again it seems to me important to apply the knowledge that we gained from in vitro sensitivity studies of the infecting organisms and to this knowledge add the value of clinical trial. At this point, it seems to me a good time to mention the value of repeated sensitivity studies in chronic infections because of the change in the bacterial flora. A good example of the importance of combined therapy is the management of Brucellosis where a combination of aureomycin and streptomycin appears to be more effective than either alone. Another point in the routine use of an antibiotic such as penicillin has been brought out in a recent report on Friedlander's pneumonia by Gill, wherein he shows that the use of penicillin in Friedlander's pneumonia, may not only be useless but harmful. In Friedlander's pneumonia there are usually secondary organisms which are sensitive to penicillin. Whereas the Friedlander organisms are resistant. By knocking out these susceptible organisms, the Friedlander organisms are more abundant and the infection more severe.

Bacterial Resistance. This most important subject should be borne in mind in the management of any and all bacterial infections. The evidence at present indicates that some strains of most bacteria can be made resistant to almost all antibiotics providing the organisms are exposed to the antibiotic long enough. It is known that gram negative bacteria develop resistance to streptomycin rapidly but to aureomycin and chloromycetin more slowly. Also organisms develop resistance to penicillin in vitro very slowly and indeed penicillin is so active against some bacteria that it is almost impossible to develop or demonstrate penicillin resistant strains of such an organism as the gonococcus. This problem of resistance is one justification for the massive doses of, particularly, penicillin that are in common use today.

Toxic Manifestations and Sensitivity. All of the antibiotics show some degree of toxic manifestations, most notable among them is the vestibular damage caused by streptomycin. Penicillin, perhaps shows the least amount of toxic reactions and sensitivity even though a wide variety of reactions to penicillin have been recorded in the literature. Most of the reactions to penicillin are of an allergic nature, some have been quite severe. I have had the unpleasant experience of seeing one that had edema of the glottis that required tracheotomy and most of us have seen varying degrees of skin reactions.

Current Status of Drug Therapy in Tuberculosis. When one considers the protean nature of tuberculosis it is not difficult to realize that no hard and fast rules for therapy can be layed down. The drugs that are most useful are streptomycin nad its derivatives, dihydrostreptomycin. The former at the present time is generally agreed to be the best drug to use routinely and the latter in exceptional instances. The usefulness of streptomycin is limited by two factors, namely, bacterial resistance and toxic manifestations. It has been clearly shown that these two factors vary with the duration of treatment and dosage and to a lesser extent with the character of the disease being treated. The next most useful drug is para aminosalicylic acid which has been shown to be bacteriostatic in vitro and in vivo. The sulfones and thiosemi-carbazones are of less value and are more toxic. The present basic plan of therapy is a combination of streptomycin and para aminosalicylic acid. That is, one gram of streptomycin given in one dose by the parenteral route daily and para-aminosalicylic acid, 12 grams daily, divided into three or four doses by mouth. The duration of therapy depended on the extent and type of disease. In the more benign type of diseases, streptomycin may be reduced to three doses per week and in the more fulminating types of disease, the dosage may be increased. In tuberculous meningitis, this combined therapy is perhaps best supplemented by intrathecal therapy with 0.050 grams every second or third day for at least 28 days. The recent trend is to prolong drug therapy, that is combined treatment for longer periods of time, that is, six months to a year and to integrate this drug therapy with collapsed and/or surgical treatment.

REFERENCE

1. Long, P. H. et al.: The Experimental Background and Clinical Use of Antibiotics: Lancet, June 24, 1950, p. 1139.

1520 Spruce Street.

Discussion

Dr. L. D. Phillips (Marshallton): My remarks will be entirely on the tuberculosis line. We have been using streptomycin and dihydrostreptomycin at the sanitarium. At first we were giving one gram daily, and one P.A.S. (12 grams).

At the National meeting, in Washington in May, doctors from the Fitzsimmons Hospital in Denver stated they thought that one gram every third day of streptomycin was just as satisfactory as a gram daily. Since then we have been using the one gram every third day and also the 12 grams of P.A.S. daily.

We x-ray all of the patients on admission and we x-ray them before this medication is given; then they are re-evaluated at the end of every thirty days as to the future treatment. These patients generally have been given streptomycin and P.A.S. for anywhere from two to four months. We have 108 patients at the sanitarium, and of these, 48 are now getting some form of this treatment. Of all the 108, there are 76 who have had or are at present getting this form of treatment, or you might say 3 out of 4.

We found too in some of the cases after a three month period of the drug that the x-ray films in the next month or two showed more improvement than they did while the drug was being administered. Just why I don't know, but we thought there was more improvement then.

Also we think, as I believe most people think, that it is of practically no benefit in chronic fibroid cases. However, the patients do say that they feel quite a bit better when they are receiving this form of treatment. Nevertheless, the x-rays in this type of case do not indicate that such is the case.

Dr. G. A. Beatty: (Wilmington). It is always very refreshing to hear Dr. Cooper, but I have never heard him cover quite so much territory as he did today. I think the only disease that was not on his long list was leprosy.

I think the point that Dr. Cooper stressed, and we will just mention it again for emphasis, is that none of the antibiotics should be used promiscuously. If possible, sensitivity tests should not only be done at first but should be repeated, because you frequently go from one antibiotic to another during the course of any of the diseases applicable.

Also, and Dr. Phillips has already mentioned this, I would like to stress what was brought up by the Fitzsimmons group in Washington; that the new method of using streptomycin over a long period of time seems to get just as good an effect by using it every third day, with the 12 grams of P.A.S. by mouth. This is particularly important if there is any surgery contemplated in the future.

Dr. Edmond G. Laird: (Wilmington). I would like to ask Dr. Cooper if there is any evidence that sensitivity is built up more rapidly and more frequently by the use of these antibiotics in skin applications, such as salves, and so forth, than by the actual injection and therapeutic use intramuscularly. It seems that in surgery, people who have had these salves used them to inevitably develop more violent reaction when they use them for something more serious later on.

Dr. Cooper: I would first like to thank the gentlemen for their discussion. Dr. Beatty referred to the work from Fitzsimmons General Hospital. They set up a protocol of combined interrupted treatment using streptomycin twice a week, and with the group of cases they treated they did not develop any resistant organisms.

I think that one of the answers is that since the war the type of disease they are handling at Fitzsimmons is a fresh disease picked up from the army and sent to Fitzsimmons. In other words, they are treating a different type of disease, perhaps, and certainly it is different from that which is commonly seen in most institutions.

I have had the opportunity, through the Veterans Administration, to review the cases that were presented at this meeting last spring by the Fitzsimmons group, and they were by and large fresh new tuberculosis. That, I think, is a different problem from treating the type of disease for example, Dr. Phillips has, and we have more of it in Philadelphia. That is more reason, as I see it, for cutting your suit to fit the cloth.

You have two substances: streptomycin and PAS and dependent upon the type, character, even the duration of the disease, plan your treatment and plan it in conjunction with whatever form of surgical treatment that is indicated.

In regard to the question, have antibiotics simplified the treatment of tuberculosis, the contrary is true; it is now more complex. We not only have collapse therapy and surgery but the importance of correlating and combining these various types of treatments. The antibiotics have made more cases available for surgery. The most outstanding feature in the recent trend is resection combined with antibiotic therapy. It is now more effective and safer than it was formerly.

On the matter of local application, I guess I left my text a little bit because I had this question covered, particularly of penicillin, which is the one that is in more common use. I think that you are more prone to get allergic responses after the use of local applications.

I meant to bring it out when I was talking about aerosol because I have used that over the years, and I was quite an enthusiast at one time until I got so many cases where the mouth and pharynx look like a piece of raw beef that I found that that reaction is quite common. The eye people see it quite commonly in using penicillin locally in the eyes, and I imagine the dermatologists see a good many reactions. Oral penicillin has the best record for lack of development of sensitization.

BIOLOGY OF AGEING*

Edward A. Bortz, M. D.,**
Philadelphia, Pa.

The many effective remedies which the practicing physician has at his command in modern times has brought about a spectacular drop in the mortality rate of many common diseases. The medical profession today has more to offer the people whom it serves than in any previous era. Programs of annual sessions of the state medical societies offer discussions of importance to the profession for the public welfare. Refinements of diagnosis and particularly treatment are discussed. Improved concepts concerning nutrition, the diseases of the vascular system and the nervous system, the control of infections and of deficiency diseases, and the early diagnosis of cancer are presented to the busy practitioners who, in turn, apply the new knowledge and thus bring about better control of disease. The result, in terms of more people living longer, is one of the amazing accomplishments of the first half of the Twentieth Century.

The Potential Life Span

Modern science has developed remarkably effective weapons for the control of disease. Primitive man in times B. C. had a short, active, and rather precarious existence of about eighteen years. In the heyday of Greece and the Roman Empire the life span had increased to about twenty-five years. In 1850 the average life span in the United States was approximately thirty-seven years. By 1900 it had increased to forty-nine, and in 1950 the average life span of the American woman is seventy years and the American man can look to an average life span of better than sixty-nine years. However, even in modern times the life expectancy rate of Biblical days still holds in those areas of the world where public health and the magic of modern medical science is unknown. The hinterlands of India, China, Africa, and possibly in some of the islands of the Pacific show a high infant mortality rate, and the Shamans, or tribal medical doctors, are still resorting to mystic formulae and incantations to drive out evil spirits.

Even in our enlightened nation the potentials of the life span have not been approached. If the utilization of the organs in the human body were maximum, the human life span should approximate 125 years. If the living cycle for the human body should follow the same maturation curve of evolution, development, and senescence as in the lower animals, it would seem that premature deterioration is an all too common condition today. As an example, a dog is full grown physically at two and has an average life expectancy of twelve years. At one and a half years of age a cat is full grown and has an expectancy of ten years. At four years a horse is fully grown and has a life expectancy of twenty-five years. According to this, if man is physically mature at twenty-five then he should have an averge normal life expectancy of 150 years. If this is an observation of value and represents the potentialities of natural, rhythmal existence, then man still has not nearly approached the optimum or the possible life span, since today he averages only seventy years of age.

Human life follows a definite biological pattern. Premature deterioration of the vascular system with the deposition of cholesterol in the blood vessels of the brain, the heart, the kidneys, and the muscles reduces the effectiveness of the human body and predisposes it to premature demise. However, one of the great contributions resulting from the discoveries in the field of radioactivity and atomic energy is the development of tracer technique with the use of tagged atoms placed in foodstuffs as carbohydrates, proteins, fats, vitamins, and minerals. Information of outstanding value is being uncovered. New data now accumulated point to an effective answer to deleterious influences such as the deposition of fatty substances in blood vessel walls. This new data suggests control of hardening of the arteries, coronary occlusion, stroke, and the unfortunate results of hypertension. This kind of premature tissue deterioration should be brought under control in the not-too-distant future.

---

*Read before the Medical Society of Delaware, Dover, October 4, 1950, by Dr. L. B. Flinn.

**Associate Professor of Medicine, University of Pennsylvania Graduate School of Medicine.

The collagen disorders, notably fibrositis, rheumatoid arthritis, rheumatic fever, and disorders of the skeletal and muscular tissues are now being intensively studied with the new methods which have made the last decade one of transcending importance. The new knowledge of nutrition offers a vigorous and healthy life for individuals at any age. Experiments wth lower anmals, as clearly demonstrated by McCay, Gardner, and others, have shown the intimate relationship between total caloric intake, quality of the diet, and length of the life span.

Stages of the Life Span

Shakespeare has recorded his impressions of the seven stages of human existence. For scientific purposes it is sufficient to point out that the periods of intra-uterine development, infancy, childhood, and adolescence are pretty definitely fixed time intervals.

It is in the later years of maturity that the stresses of over-indulgences of modern living begin to exact their toll. The onset of tissue degeneration may be followed by an acceleration in the speed of body deterioration. Even so, the human life span is increasing.

In the years of early maturity and old age the disorders popularly designated as the degenerative conditions top the list in mortality tables. More than a million lives are lost each year due to premature breakdown of the vascular tissues. It does not matter much whether the certificates are labeled as "coronary occlusion," "apoplexy," "cerebral thrombosis," "hypertension," "cardiovascular disorders," or "nephritis." Control of body functions by diet, elimination of poisons, adequate rest, rehabilitation, if properly applied, may extend the mature years, the useful years of human life, with delay in the ravages of senile changes.

Geriatrics

In the first half of the twentieth century emphasis has been placed on youth, speed, efficiency of production, hurry, the time clock. The thing to do was to be busy with an engagement-filled calendar with little thought of time for reflection. One might, perhaps, designate the worship of high-speed efficiency methods as an American neurosis. Is it not high time that an Age Movement should now be recognized, more especially since passing days are carrying all of us into the period of the later years. Geriatrics now appears as a specialty in the practice of medicine which has to do with the medical disorders of elderly individuals. These, principally, are tissue degeneration of the blood vessels and the organs, weariness and body weakness, which is often the result of nutritional deficiency, and the boredom of uninteresting living conditions.

The geriatrician is coming onto the stage at a most appropriate time. There are many patients waiting for him. An accurate survey of living practices and an appraisal of physical resources is preliminary to any prescription for our elderly patients.

Prophylactic geriatrics recognizes the possibilities of preventive measures which can be instituted. Control of body weight, adjustment of the diet, improvement of body elimination, the elimination of infections, the need for more rest and recreation—all these are important to the continued well-being of patients approaching the summit of the years. In this area of the human life span, the biological potentials should be kept in mind. Premature human deterioration may be brought under control and an expansion of the harvest years, the happy years, may result.

The Major Involution

The human mind, according to Aldred Scott Warthin, has always shown a definite aversion to the acceptance of old age and death as natural physiological processes. To the eyes of youth age and the aged appear foreign, almost as another race of humans on a lower scale, a race that is to be pitied and, at best, tolerated. This, as Warthin states, is a normal psychological action of the immature mind.

Problems of ageing and discussions of worthwhile objectives of human beings are intangible and likely to produce too sober a frame of mind. Thus, they are readily brushed aside; nevertheless, the problems of ageing are basically important. The premature disposition of energy invites decay; therefore, these processes are the concern of scientific medicine. They must be studied by the profession. Ways and means can be found which will add vitality and preserve the waning strength of the ageing body. Senescent processes in many instances can be guarded against.

Warthin describes the life of man as a tragic comedy in three acts—evolution, maturation, and involution. Medical science is now turning its attention to the last act, involution. The human machine transforms, stores, and releases energy. At birth the individual is given an energy charge with potential to carry it along for a variable period of time. Warthin describes the individual human body as a temporary incident in the life of the species.

In the biological human life cycle the body attains full development and then struggles for maintenance at the height of maturity until energy loss brings about decline and senescence. Senescence is a gradually developing state of organ and tissue involutions. When these are sufficiently advanced as to be clinically apparent, then age is upon us.

Different tissues of the body follow various maturation and involutional cycles. Within a single body, as shown by Cowdry, the processes of ageing act at different speeds. The coronary arteries age more rapidly than the arteries in the wrists. The ovaries become senile long before other endocrine glands involute. The life span of particular body tissues is different from that of the body as a whole. Friedenwald believes the possible life span of the human eye is 130 years if the body could last that long. Weidman points out that the skin of the trunk of an eighty-five year old furnishes the same protection as at twenty. The epidermis, the outer layer of the skin, may have a life span exceeding that of the eye.

Cowdry describes certain tissues of the body as "fountains of youth." These are found where there are reservoirs of cells that never age or die except by accident. The cells of the bone marrow are an example. These are described as intermitotics because their individual lives extend from the mitosis which produces them to the following mitosis. These cells keep dividing and some differentiate into blood cells; however, only a small percentage follow this pattern of differentiation because if all of them did, the reservoir cells would differentiate the tissue out of existence. Another "fountain of youth" tissue is in the epidermis, which continues to manufacture young cells throughout the life of the body.

There is an old saying that the human body changes completely every seven years. This might be hard to verify. However, an older body is an entirely different mechanism than that of a young adult. The changes which take place, the ageing processes, should be understood by practicing physicians in order that body energy may be conserved and living processes may be reinforced in the later periods of the life span.

Warthin maintains that senescence is a normal involutionary process which affects all of the vital organs and functions. He terms old age, a major involution, as a biological function necessary for the perpetuation of the species. When he becomes biologically useless, he is removed from the scene by the gradual fading away process of senescence. Warthin states, "The universe demands mortality for the individual if the life of the species is to attain immortality through the ability to keep up with the changes in environment of the successive ages." Warthin was thinking entirely in terms of man as an animal with total disregard for the needs of society. The extension of the human life span is producing new opportunity for the development of social equilibria. Here is a new field which needs to be explored by the geriatrician.

In striving for the preservation of human life, science is now examining the processes and influences which destroy it. It may be possible to avoid premature ageing of tissues. Life, according to Cowdry, is a succession of adjustments between the individual and his environment and also between his organs and tissues. Some of these may be easily made; others may be only partial and leave the individual handicapped by depletion of reserves. Ageing processes are hastened or modified by diseases; therefore, one way to prolong life is to protect the organisms from illness or disease. It becames a matter of avoiding complications which accelerate the processes of ageing.

Certain tissue changes occur with the passage of time. Decrease in water content takes place and the individual shrinks in weight and stature. There is progressive dehydration, there is condensation of colloids. Elasticity and flexibility decrease. Wells believes this accounts for the ageing of elastic colloidal fibers in blood vessel walls.

Physiological reserves are likely to diminish with the passage of time. The decrease of adaptability is a sign of oncoming age.

Gerontotherapy

Treatment of the disorders of the later years of life may be designated as gerontotherapy. As pointed out by Gardner recently in a paper before the American Chemical Society, gerontotherapy deals with the slowing down of the ageing processes and the prevention of many of the elements which are common in elderly patients.

Efficient application of known scientific methods for the control of disease will bring about a further extension of the human life span. The rich colors and qualities of interesting mature human life with the performance of work which has social significance will add to the quantity and quality of human living. Newer drugs, including the antibiotics, the vitamins, the hormones, cortisone, and ACTH are a few of the spectacular remedies now in the armamentarium of the geriatrician. The expansion of the mature years represents a major goal of science today.

2021 W. Girard Avenue.

Discussion

Dr. L. C. McGee: (Wilmington). I should like to join Dr. Flinn in regretting that Dr. Bortz, for a good reason, could not be present today. I enjoyed his paper, but we enjoy also his personality and stimulating presence.

Doctor Bortz has viewed man as a biologic unit. The life curves suggest that 21 million men and women 65 years of age and older will be living in this country by 1980. These millions will eat, sleep, wear out clothes, wreck automobiles, view television, root for the "Phillies," and, as consumers, do most of the things that men and women under 65 years of age will do. They will vote, too! It remains to be seen whether a) the care of these older citizens will be an economic burden on the back of younger workers, or (b) they will be economically self-sustaining through better utilization of their productive abilities in declining years. Ageing man may well be viewed as a sociologic and an economic unit in addition to his being a biologic unit.

Some students of cellular metabolism in ageing tissues found a hydration rather than a desiccation of tissues in old animals. (H. W. Shock, "Metabolism in Old Age," Bull. N. Y. Academy of Medicine 24: 166-178, March 1948). The water content of the cells remained unchanged, whereas the water content of aged tissues increased. It has been suggested that this increase is an extracellular edema consequent to atrophy, the loss of tissue cells, and to cardiac or renal hypofunction.

It is good to hear Doctor Bortz note the misplaced emphasis on speed and productive efficiency in the human body. The following comment has been made on modern man:

The Modern Man

"Hurry the baby as fast as you can,
Hurry him, worry him, make him a man,
Off with his baby clothes, get him in pants.
Feed him on brain foods and make him advance.

"Hustle him, soon as he's able to walk,
Into a grammar school; cram him with talk,
Fill his poor head full of figures and facts,
Keep on a-jamming them in till it cracks.

"Once boys grew up at a rational rate,
Now we develop a man while you wait.
Rush him through college; compel him to grab
Of every known subject, a dip and a dab.

"Get him in business, and after the cash,
All by the time he can grow a mustache.
Let him forget he was ever a boy,
Make gold his god and its jingle his joy.
Keep him a-hustling and clear out of breath,
Until he wins—nervous prostration and death."

Dr. L. B. Flinn: (Wilmington). We have heard considerable talk the last day or two about ageing processes and rehabilitation of the elderly, but also the sick, particularly those with vascular disease. Some of us have been particularly interested in this problem with reference to institutions such as the Gov. Bacon Health Center.

This noon some of us were given a bird's-eye view of the State Welfare Home at Smyrna. Some of the problems there with the particular patients were not new to us. I would like to suggest that more members of the Society visit that institution. It is a large tract of ground, I think about 56 acres. There are numerous buildings. There are some 380 patients with far too little bed space. They get very good care. The director of the institution must take care of its entire management. He is the sole physician, except when he calls in an occasional outside consultant.

It seemed to us a tremendous job, and we wondered at it and remarked about it. But perhaps it is a practical example of the problems we have been discussing. Dr. Prickett took that job because he retired.

Dr. C. J. Prickett: (Smyrna). Thank you, Dr. Flinn, for those very fine remarks. I only wish I could do a whole lot more. I believe I daily think of the springs that we used to have in our bodies that we people of my age do not have any longer, and we see very very little research on elastic tissue. I would like to see some work done on that so that we might retain the springs in our bodies which we had in our youth. I know that myself and all of my patients in the welfare home would certainly be much better off, and we could accomplish much more if we could just spring along a little bit more.

In regard to Dr. Bortz' paper, Dr. Gumpert of New York recently said that he believes that rehabilitation of older people depends almost entirely upon how much we can preserve and how much we can reactivate, not only in the mind and the general health but the social part of the individual's life. That means passing out a hand of hope to the fellow, being kind to him, and just making him feel that his life is still very much worthwhile, even at his greatly advanced age. Then I think finally of the statement which someone, I believe it was Ruskin, who said that if we would add years to life we must add life to years.

I want to say that any member of the Medical Society who wants to come to the Home at any time is certainly welcome. We will be glad to see them.

President Fitchett: This whole problem of ageing is getting to be a more important one and a larger one every year. I am sure Dr. Prickett has had a great deal of experience with it in his work there at the Home in Smyrna.

A REVIEW OF BASIC PSYCHIATRIC PRINCIPLES*

Paul J. Poinsard, M. D.,
Philadelphia, Pa.

This evening we will review certain basic principles of psychiatry. I have outlined four major topics which will be covered. First, is the topic of anxiety as it pertains to psychoneurosis; second, a brief review of psychosomatic conditions; third, a consideration of the obsessive personality, and finally, management of the psychoneuroses in a practice other than a Psychiatric practice.

In considering psychoneuroses, if we are to arrive at a common denominator of symptoms that is peculiar to neuroses, it is anxiety. Without anxiety, there is no neurosis. To briefly define anxiety, it is subjectively a feeling of dread, of impending disaster, and associated with this are the physiological manifestations of over-activity of the sympathetic nervous system; i. e., palpitation, perspiration, dilatation of the pupils, and so on. The way in which the individual unconsciously handles his anxiety determines to a large part the type of neurosis which he develops. If one has a concept of how anxiety is handled, one has a working framework for the understanding of the psychoneuroses.

The first and probably most common type of psychoneurosis is that of anxiety state. The person who has an anxiety state has anxiety that is free-floating so to speak. In describing his symptoms, he will say, "I have these attacks during which I feel scared to death. I don't know what I am afraid of but I feel that something terrible is going to happen." The apprehensive feeling is diffuse and is not displaced on to any object. Anxiety state—free-floating anxiety.

The next type of neurosis frequently seen is the phobic state. A few of the phobias complained of are fear of riding on a bus, street car or elevator; fear of scissors and/or knives; fear of heart trouble; fear of cancer and fear of pregnancy. These individuals are handling anxiety by externalizing, by displacing anxiety on to some external object, person, an organ or system of the body.

---

*Transcription of proceedings of the scientific staff meeting, Saint Francis Hospital, Wilmington, Delaware, February 27, 1951.

The next common type of neurosis is that of obsessive neurosis or obsessive state. The patient with an obsessive neurosis is apt to give a clue to the diagnosis by saying, "I am a worrier." The doctor is apt to dismiss this significant remark by indicating that this is a universal malady. He should be aware that the patient is very often implying much more than is apparent when he says he worries. Ask him what he worries about and he may say: "Very simple things. After I leave here I will wonder whether I said the right thing to you; whether I said too much; whether I did not say enough, and so on." What is going on in that patient's psyche? He has an obsessive thought that he has indicated can be simple in content. It can be: Did I say enough? Did I say the right thing? It can be ridiculous in content such as why does the number three come after two, or a profound metaphysical premonition about the nature of life, the universe, or death. An obsession is a repetitive thought that persists in consciousness and regardless of how much force the individual may bring to bear to get rid of this annoying thought, he is very frequently unsuccessful in the attempt. You might ask him how he feels if he is successful. He will say: "I feel sort of worried, uncomfortable, butterflies in my stomach, and a tense feeling in the back of my head. Generally I feel scared and frightened." In other words, anxiety. Thus we see that the obsessive thought is present to enable the patient to relieve his anxiety.

Another type of condition seen is that of compulsion neurosis. A compulsion in the physical sphere is analagous to obsession in the mental sphere. We have seen that an obsession is a repetitive thought that persists in consciousness; whereas, a compulsion is a physical act that must be performed by the patient in order to allay anxiety. In its severe form, we are all familiar with the compulsive hand-washer. If one asks this type patient why he does not refrain from washing his hands, he is apt to say, "If I don't, I feel tense, worried, a feeling of butterflies in my stomach, with pain in the back of my head." In other words, he is anxious if he refrains from this compulsive act, whatever the compulsive act may be. That patient is allaying anxiety by means of his compulsive act.

And finally, the patient with a conversion hysteria. This conversion symptom may be in the motor, sensory, and/or visceral sphere. Anxiety is being converted into a physical symptom in one or all of the areas mentioned. True conversion symptoms are not common. It is not frequently that we see a conversion blindness, or a conversion paralysis. If one thinks of neurosis in terms of anxiety and how a particular patient unconsciously handles his anxiety one has an acceptable and understandable descriptive framework for classification and understanding of the psychoneuroses.

In considering psychomatic conditions you all know that the term psychosomatic is a word that has become quite popular in the last ten years. It is not a new word or any particular new entity that has been discovered. It is used to describe a somatic disturbance that has its origin in the psyche and implies the relationship between mind and body. The term "psychosomatic condition" is usually reserved for those conditions where a particular organ or system is involved. For example, certain cases of peptic ulcer; certain cases of colitis, and certain cases of headaches are psychosomatic. The personality make-up of patients with these conditions frequently reveal similar components on both a conscious and unconscious level. For example, the patient with colitis is often the person who feels that he has given everything and that he has received little in return. He is a grasping type, an extremely possessive individual, and yet he has no compunction about his possessiveness and his grasping. If questioned about these tendencies, he may say, "Yes, I ask a lot, I demand a lot; but after all I have given a great deal." It seems to be in the ratio of giving and receiving that his major conflict develops and expresses itself physiologically in colitis.

The person with peptic ulcer, on the other hand, from the standpoint of psychopathology, is apt to be the person who appears to the outside world as being extremely independent; the person who is apt to say, "I don't ask for much help, but after all, I don't need any help. I am self-sufficient. I can carry on under my own steam." The unconscious need is apt to be the exact reverse. Unconsciously, the person with the peptic ulcer is frequently extremely dependent and it is felt that the gastro-intestinal system is under the influence of this psychic dependency need which influences gastro-intestinal activity apart from normal nutritional needs.

Further in the outline is the consideration of the obsessive personality. In psychoanalytical terminology, the obsessive-compulsive personality is akin to the anal personality. It was Osler who said that if you understand syphilis and all of its ramifications, all other things in medicine will come unto us. Certainly it is true in psychiatry that if we understand the obsessive-compulsive (anal personality) other things in psychiatry will come unto us.

A large percentage of patients with neuroses represent the obsessive-compulsive personality. To describe this personality, there are many adjectives. We can begin by saying that this individual is extremely exacting, meticulous, fastidious, overly-conscientious and extremely punctual. He is usually the person sitting in the office waiting for you, for he must always be on time. If he is not on time and you check his blood pressure, you will find that, in addition to having an elevated blood pressure, he is just generally upset, tense, and anxious because of his tardiness. If the obsessive-compulsive individual develops a psychosis, he will almost invariably develop schizophrenia. The schizophrenic is very frequently the patient with a decompensated obsessive-compulsive neurosis. The anal personality can go through life without developing a neurosis in the true sense. He can get along reasonably well without becoming incapacitated by the personality traits that I have mentioned. If he does develop a neurosis, it will be of the type that we considered under the heading of compulsive state or obsessive state.

When a few of these facts are available to us the understanding of the neuroses and origin of related somatic complaints becomes clear. I think all of us will agree that a patient should be considered to have an organic condition until proven otherwise. But so often we spend too much time in trying to arrive at our final diagnosis. Our orientation in medicine is such that we consider it a diagnostic disgrace to miss an organic diagnosis, but yet we can allow a person with psychoneurosis to come in and out of the office for months and if the diagnosis is missed we don't particularly feel bad about it.

We have considered what happens to the obsessive-compulsive (anal) personality if he becomes psychoneurotic and what type of neurosis that he will have. Also, it is the obsessive-compulsive personality that usually has trouble in the involutional period. The person who has an involutional depression is frequently the person who fits into the obsessive-compulsive pattern. An understanding of what existed in personality prior to the presenting symptoms certainly can be very helpful in arriving at the present diagnosis. Most cases of depression exist or occur in this type personality. Briefly, the dynamics are related to excessive standards; they have expected too much of themselves and because they were unable to measure up to their own demands depression was inevitable. If their demands were placed only on themselves perhaps their conflict would not be as great; but they are apt to impose their extremely rigid standards on other people, and, because other people do not measure up, they are disappointed in them also. Thus we see a person disappointed in himself and disappointed in people generally so that depression is inevitable. Another point about this type personality is that they are extremely refractory to the suggestion of Psychiatric treatment for several reasons. One reason is that they put moral value on their behaviour. They say, "It is right to be this way; to be any other way is wrong; — so that you are now indicating that because of the way that I am, I am sick. Well, I would much rather be sick and hold on to these things that I consider right." The Obsessive-Compulsive is refractory to the suggestion of Psychiatry and is also refractory to Psychotherapy generally.

In regards to the handling of Psychoneurosis in general practice, so often doctors do not get along well with the person who has a neurosis and they do not understand why. They will say, "I don't know how you deal with those people. How do you sit down and listen to them?" Often, the reason the practitioner does not do well with the psychoneurotic is because of the doctor's own hostility toward the patient. He is mad. He does not like to think of a human being afflicted with these difficulties. He may feel that this person is weak; that he has a weak will; that he is spineless and has no character; therefore, he is mad, and does not get along well with a person who has a neurosis. It is so important in dealing with these patients that the doctor understand his own feelings in the relationship. Why does he feel the way that he does about these patients? I doubt very much whether one can get very far in helping these people unless one can understand how one's own conflicts and one's immaturities, can enter into the therapeutic situation in such a way that it is not going to be to the benefit of the patient.

It is inadvisable to tell a patient that he has a neurosis at the time of the first examination. The diagnosis may become apparent during the initial interview, but it is not going to serve any purpose, except perhaps to set you up in his mind as being a very keen diagnostician, to tell him that he has a neurosis. You might tell him that you are not certain of the nature of his difficulties. You should have him return and at the second interview, have him talk more about himself, about what may be disturbing him, more about his relationship to his family, to his employer, and you will find that after a brief period of time, usually, not always, (because some people will never arrive at this conclusion) the patient himself will arrive at the conclusion that he does have a neurosis; not in those terms, but he begins to realize that the doctor is indicating to him that his symptoms do not have an organic basis, and by this time the doctor has established a relationship with the patient that is going to be helpful to him.

Let us consider the advisability of suggestive therapy. So often we justify some of our therapeutic procedures, not only medically but surgically as well, on the basis of their suggestive values. The value of this type of treatment is definitely limited. If you feel that a person with a neurosis should have some kind of medication, probably a sedative, it is wise to say that the medicine will help until the cause is relieved. If by giving medicine and indicating that it is the answer; if by giving an injection and indicating that it is the cure, all that one is doing is fixing that person's neurosis. And, as has been frequently said, the last state of that person is worse than the first.

I have mentioned the necessity of giving the patient an opportunity to talk. So frequently this is not done. Lack of time is very often given as an excuse for the omission. The physician is so accustomed to giving directions and advising that he often allows little time for listening. Paradoxically enough, the person with a neurosis will get more relief from what he said to the physician than from what the physician said to him. Often following a psychotherapeutic interview during which time the psychiatrist may have said little, the patient at the next visit will say, "I felt so much better after I left here the other day." Why did he feel better? He felt better for two major reasons: 1.) because of the relationship that the psychiatrist was able to establish and 2.) the therapeutic benefit of emotional catharsis associated with verbalization. The psychotherapeutic value of verbalization in the presence of a kindly and understanding attitude on the part of the physician is inestimable.

Frequently the question arises concerning the wisdom of explaining the psycho-pathology to the patient. Until he is consciously aware of these factors as a result of his own conclusion arrived at by investigation, he is not emotionally prepared to receive this information. Such technique usually creates more resistance rather than establishing helpful insight.

Finally, let us consider the preparation of the patient for psychiatric treatment. Not all people with neuroses need to consult a psychiatrist, because many of them can very effectively be treated by the physician who happens to see them first; but, in the event that it becomes necessary that they see a psychiatrist, a certain preparation is necessary. The referring physician often says to the psychiatrist: "I have so and so who ought to come to see you, but I just can't get him to psychiatry." Why can't he? Usually because of the resistance of the doctor. If the relationship between the doctor and the patient is good, the patient will usually carry out the directions of the doctor. But if the doctor has reservations, resistances, and hostilities of his own, the patient is going to sense them, even though it isn't purposely implied, even though it isn't said. Frequently, the patient finally arrives at the psychiatrist's office under threat. Such things as: "If you don't get better I'll send you to a psychiatrist," or "Why don't you go to a psychiatrist? He won't do you any harm." If he overcomes these obstacles, the patient sees the psychiatrist once or twice and nothing at all is accomplished. If you do anticipate psychiatric treatment for a patient, prepare him properly and don't add to his resistance. The average person has already existing resistances toward seeing a psychiatrist.

We will have the pleasure of hearing from Father Thomas Reese, who is going to discuss the relationship of psychiatry and psychiatrists to religion. The priests in this diocese have been extremely interested in learning the fundamentals of psychiatry, because we know that the person with a neurosis is apt to go first to the priest, rabbi or minister and then to the doctor, or vice-versa. While religion and psychiatry are two distinct fields, the liaison of physician and minister can be often helpful in guiding the patient toward the goal of emotional maturity.

2031 Locust Street.

Rev. Thomas J. Reese*: I appreciate this opportunity of being with you and hearing Dr. Poinsard's interesting paper. The doctor's comments on anxiety and obsessions were enlightening and helpful. As a priest, I am frequently called upon to see people suffering from various kinds of anxiety and scruples. An understanding of the underlying causes of these conditions helps to prevent the development of hostility towards people suffering from them, and at times enables one to be of real assistance. Many of Dr. Poinsard's suggestions on the handling of psychoneurosis in general practice apply with equal validity to the handling of psychoneurosis by a priest, minister, or rabbi.

It is significant that a priest should be speaking at a staff meeting of medical men. It implies that there is some relationship between the subject under consideration — psychiatry —and religion. Of course, psychiatry is a specialty in the field of medicine. However, it deals with certain aspects of man that give it much in common with religion. The physician usually concentrates on organic disorders, such as a weak heart or diseased lung, and with such things religion has very little to do. The psychiatrist, however, is usually concerned with functional disorders and personal disturbances. This is closer to the field of religion, which is interested in morals, i. e., the goodness or badness of human acts. Though both are concerned with human behavior, psychiatry and religion consider it from different points of view.

The average doctor and the average clergyman have much in common in relation to psychiatry. Usually we view it with mixed feelings. We are outsiders. While we see its results and appreciate what it can do for a mentally sick person, we are vaguely suspicious of it. We probably feel equally incompetent to deal with psychoneurotics; as Dr. Poinsard suggests, we may have hostility towards the psychiatrist who does seem to be able to do something with them. Some of the suspicions of doctors and clergymen is understandable.

The doctor may be suspicious of psychiatry because of its newness. It is a late-comer in the medical field. As with every new science, its proponents have made mistakes. Further, it deals with the patient from a different point of view from that familiar to the organically orientated physician. It is understandable that a doctor might be nettled by his inability to help a patient with the usual procedures of medication or surgery. On the other hand, he is fortunate to be able to refer the psychoneurotic patient to a specialist who can really help him. While it is reasonable for a doctor to look for and treat organic ills, he should be able to make a differential diagnosis within a reasonable time so that a patient who needs psychotherapy can get it promptly. He should not regard psychiatry as a last resort, a kind of general dumping ground for people he has not been able to help. Like the clergyman, the doctor often meets patients when they are first developing neurotic symptoms. If he is able to determine when a patient needs specialized psychiatric treatment and sends him to the psychiatrist with the proper attitude, he can perform a real service for his patient.

---

*Pastor, St. Helena's R. C. Church.

Many clergymen have proved to be as suspicious of psychiatry as some members of the medical profession. Again, there are some reasons for the suspicion. But the fault lies on both sides; the suspicion can be allayed, and both the psychiatrist and the clergyman can profit by mutual help.

Some of the clergy's suspicion of psychiatry has a historical explanation. Psychiatry, and especially psychoanalysis, developed in an atmosphere of materialism and anti-religious bias. Some of the pioneers in the field let their philosophy color their science and caused them to misinterpret the facts they had observed. For example, Freud's remark that religion is a universal obsessional neurosis is an expression of his personal anti-religious bias rather than a conclusion based on his scientific observation. It is understandable that such a remark would make clergymen suspicious of psychiatry and lead them to reject it wholesale, not separating the wheat from the chaff, not distinguishing between the unacceptable philosophy that sometimes intruded itself and the facts of observation and therapeutic techniques which were true and valuable. There would have been better understanding had the men of religion looked at the facts and ignored the fancies of some of the psychiatrists. On the other hand, the psychiatrists would have done a better service to their science had they stuck to facts. As psychiatry has become more truly scientific, it has become increasingly acceptable to religion.

In the past, clergymen were often hostile towards psychiatry because they feared the psychiatrist might cause spiritual harm to their patients. Psychiatrists were concerned with relieving patients of anxiety, of resolving inner conflicts. Often the patient was said to have a harsh super-ego in consequence of strict upbringing and overly great demands. It seemed at times that the psychiatrist in attempting to relieve the patient of his anxiety also relieved him of his conscience and destroyed his sense of right and wrong. Most psychiatrists today recognize that it is a disastrous short cut to try to relieve anxiety by changing the patient's standard of values and moral code; they realize that a patient has to find adjustment within the framework of his basic moral and religious convictions As psychiatry has become more patient-centered and less directive it has become less objectionable to religion.

Misunderstanding between psychiatry and religion became less frequent as the function of psychiatry was more clearly defined. Clergymen sometimes thought that the psychiatrists were trying to remake the personality of the patient and impart to him a new philosophy of life, a new set of principles and convictions. Some psychiatrists may have done this, but they were not good psychiatrists, and the clergymen had every right to protest. Fortunately, it has become increasingly clear that psychiatry's chief concern is with the unconscious or the subconscious, with behavior patterns and motivation often carried over from childhood and influencing an individual without his being aware of it. The psychiatrist is concerned primarily with unconscious forces in man. The clergyman, on the other hand, is concerned with what is conscious in man, what man recognizes himself to be responsible for.

As an illustration, contrast psychotherapy, especially psychoanalysis, with Catholic confession. In confession, a person being conscious of having committed a sin, a wrong act for which he accepts responsibility, confesses his sin to the priest for the purpose of having it forgiven. He knows he is guilty; he feels guilty. Once he has received absolution, the feeling of guilt should leave, because the sin which occasioned the feeling of guilt is gone. On the other hand, in psychotherapy one is usually dealing with a person who feels guilty and anxious, but who is not consciously aware of the source of the guilt. In the therapeutic process, the patient gradually reveals the unconscious source of the guilt. The therapist cannot absolve him, as does the priest in confession, but he can help while the patient learns to differentiate fantasy from reality and obtains relief from feeling guilty about things of which he is not guilty at all and continues to feel guilty about the things of which he should feel guilty. The priest and the psychiatrist obviously have different functions; and it is important that each recognize the area in which he is competent. The priest frequently wastes his time in trying, by spiritual means, to relieve anxiety that has no conscious source. The psychiatrist is doing his patient a disservice if he tries to remove a sense of guilt by denial of sin.

Obviously, the priest and psychiatrist should work closely together. The priest should have sufficient psychiatric orientation to recognize a neurotic or psychotic individual and know when he probably needs psychotherapy. He can waste valuable time and do irreparable harm by trying to do what only the trained psychiatrist can do. Conversely, the psychiatrist should recognize when a patient needs spiritual guidance and direction, or a sincere confession, and send him to the priest.

More psychiatric knowledge would be helpful in clerical as well as general medical circles. It would assist the clergy in dealing more effectively with people, understanding them better, allaying hostility towards them, referring them for psychotherapy when needed, and preparing them properly to accept psychiatric help. Clergyman and psychiatrist can cooperate in helping disturbed people achieve emotional maturity.

610 Philadelphia Pike.

THE POST-PRANDIAL BLOOD SUGAR
A Probable Normal

Joseph L. Ackerman, M. D.*
and
Edward M. Bohan, M. D.,**
Wilmington, Del.

In discussing the culture of the middle ages Hayes and Moon[1] noticed that there was a tendency for medieval scholars to derive their notions of science not from personal observation and experiment but from books. While this tendency is not so prevalent today, it still exists. We have been taught as medical students that the normal fasting blood sugar is 80 to 120 mg. and that there is a rise after a meal to a height quoted by various teachers and writers as 140 to 180 mg. We, as students, and later practicing physicians, have been inclined to accept this as truth because we have been taught that it was so. In the proceedings of the American Diabetic Association[2] in 1948, it was resolved that "upon recommendation of an advisory committee of physicians, a consistent one hour post prandial venous blood sugar of 170 mg. per cent or above plus glycosuria were considered to be indicative of diabetes." In the same proceedings Blotner[3] cites three cases in which the blood sugar was 120 mg. or below fasting and the two hour glucose tolerance curve showed values of over 200 mg. with glycosuria, except in one case in which the blood sugar was 220 mg. one and one half hours after glucose and the urine still negative for sugar. However, in this case the urine became 3+ at the one hour level. He concludes "if one blood sugar analysis is to be made, I think it is best to determine it in one half or one hour after a high carbohydrate meal." The most interesting observation here is the finding of the negative urine with a blood sugar of 220 mg. This has been noticed in other cases at the diabetic clinic at St. Francis Hospital, and this finding has also been emphasized by Sindoni[4] at the Philadelphia General Hospital, who thinks there is undoubtedly a variation in the renal threshold in many cases of diabetes.

John[5] says that in the normal person following each meal there is a rise in the blood sugar level. "This rise is not very high and does not last long, from one to two hours at most, usually one and one-quarter to one and one-half hours. Thus we speak of a normal, physiologic, post prandial hyperglycemia." He thinks that during twenty-five per cent of the twenty four hours we can consider an allowable period of hyperglycemia in the average person. But an elevation to 126 or 136 mg. is not considered normal by him at this two and one-half hour period post prandially, and a glucose tolerance test is justified. While the statement of John is more in accordance with modern thinking, he does state that a normal hyperglycemia occurs at the one and one-half hour period after meals. Other writers such as Kolmer[6] and Yater[7] in separate communications consider hyperglycemia to occur normally after a meal. Kolmer in 1943 says that hyperglycemia occurs normally after a meal, especially after the ingestion of carbohydrates and he believes that blood sugar determinations should be made after a period of at least five hours of fasting, or preferably in the morning before breakfast.

---

*E. I. du Pont de Nemours Company, Medical Division, Wilmington.

**St. Francis Hospital, Department of Metabolism.

In Yater's opinion in 1938 the level of the glucose in the blood rises after one-half hour to 150-160 mg. percent, but falls to its original, or even a lower level, within two to three hours after the meal.

Another statement by Duncan[8] in 1942 further confuses the issue. He says in his excellent book on Diseases of Metabolism that the value obtained on a specimen of blood taken two hours after a meal should not exceed 160 mg. per 100 cc, and if it does exceed 160 mg., it is good evidence that there is impairment of the carbohydrate tolerance, especially if there has been no previous restriction in diet, and the patient has had a meal containing 100 gm. of carbohydrate previous to this test.

It is realized that the quotations from these writers is rather old, and that their opinions may have changed since then, but they are only given to show the trend of thinking until the present day, and cast no personal reflection on the high character of these references.

Joslin, Root, White and Marble[9] in 1944 regarded a blood venous sugar of 0.17% following a meal as indicative of diabetes. There is a tendency today to regard a normal sugar three hours after a meal containing at least 100 gm. of carbohydrate as excluding diabetes mellitus. Many writers, including Harrison,[10] emphasize this fact.

Two methods of venous blood sugar are employed today. Some clinics have replaced the Folin-Wu method with the Somogyi method which eliminates reducing non glucose substances in the blood and gives the "true glucose value." In the "Diabetic Guide Book for the Physician," published in 1950, by the American Diabetes Association, the following definitions of diabetic diagnosis are established:

Folin-Wu Method—Over 130 fasting
Over 200 after eating
Somogyi-Method —Over 110 fasting
Over 150 after eating.

However, it is stated that blood sugar values below the above levels do not exclude diabetes. A diabetic may have normal blood sugar both before and after eating if diet has been restricted or insulin has been taken before the test. On the other hand, a non-diabetic person who has been starved may have temporary hyperglycemia and glycosuria when first fed. This emphasizes the fact that before a glucose tolerance or meal tolerance test, the diet should not be restricted for three days previous to the test, the carbohydrate being at least 300 gm. per diem, and that if the meal tolerance test is performed it should contain at least 100 gm. of carbohydrate.

Orent-Keiles and Hallman[12] gave volunteers eight different food combinations ranging from a cup of coffee to a breakfast containing 758 calories. They estimated the blood sugars post-cibally from one half to three hours at one-half hour intervals. The Folin micro-method was used, and the time was estimated from the time eating started. A standardization period of three weeks was insisted upon during which all the subjects ate the same meals. During this period the subjects became accustomed to the various procedures employed in the study.

Fifty-six blood sugars were taken after the various breakfasts. The maximum two hour rise in the whole series was up 23 mg. from a 79 mg. fasting 102 mg.). The maximum height at the two hour post-prandial level was over 120 mg. on only one occasion when it rose to 127 from a fasting of 111. The average rise in the fifty-six sugars at two hours after breakfast was 8 mg. above the fasting level.

Probably the pioneer work on fasting sugar versus post-prandial sugar was done by Sindoni[13]. Asserting the fact that the glucose tolerance test was an artificial strain on the carbohydrate regulating mechanism, he gave twenty normal people, from six to sixty-one years of age, a breakfast consisting of 32 gm. protein, 64 gm. of fat and 95.6 gm. of carbohydrate. There was no rise over the fasting blood sugar in two hours, most being slightly lower, the average decrease being 4.8 mg. under the fasting. Approximately the same level was obtained at three and four hours post-prandially. Only at the one-half hour level was there a rise of an average of 0.8 mg.

Two Hour Post-Prandial Blood Sugar Levels

In recent years the post-prandial blood sugar has been steadily acquiring popularity. Some physicians are utilizing it almost in entirety and others are employing it in conjunction with the fasting method. Since controversy exists pertaining to the average range of normal, the authors undertook to examine the results of the post-prandial blood sugar determinations on file in the Medical Division of the E. I. duPont deNemours Company, Wilmington to asertain information on "the probable normal."

The records of the Medical Division contained 255 reports between the years 1935 and 1950. These tests were done mainly for diagnostic purposes on apparently normal subjects undergoing annual physical examinations. Physical findings and routine laboratory studies were recorded on each employee.

The Folin-Wu intravenous blood sugar determination was performed on each individual two hours following a breakfast containing about 100 grams of carbohydrate derived from fruit juice, cereal, egg, bacon, toast, coffee, cream and sugar.

Ages in the group ranged from 18 to 65. The majority of the patients were in the middle age groups. All workers were employed in sedentary positions. The group was comprised of 183 males and 72 females.

Group I (ages 18 to 20) was represented by just two individuals of the male sex with an average probable normal of 98 mg. Group II (ages 21 to 30) consisted of 14 males and 13 females totaling 27 persons with an average probable normal of 96 mg. The lowest blood sugar was 69 mg. and the highest was 126 mg. In Group III (ages 31 to 40) there were 43 employees. Of these, 33 were male and 10 female. The average probable normal in this group was 114.6 mg. The lowest recorded value was 76 mg. and the highest was 200 mg. Group IV (ages 41 to 50) was by far the largest one. It was composed of 106 individuals. It consisted of 63 males and 43 females. The average probable normal was 108.6 mg. The low value was 69 mg. and the highest was 243 mg. Group V (ages 51 to 60) consisted of 60 males and 6 females totaling 66 persons. The average probable normal was 114.4 mg. The low determination was 76 mg. and the highest was 260 mg. Group VI (ages 61-65) consisted of 11 males. The average probable normal was 98.5 mg. The lowest recorded value was 67 mg. and the highest was 147 mg.

The average probable normal post-prandial blood sugar for the entire 255 persons was 104.8 mg.

Table I shows the results on ten suspected diabetic cases.

Table I

AGE	SEX	HEIGHT	WEIGHT	POST PRANDIAL BLOOD SUGAR 2 hrs. P-C	COMMENTS
41	F	68"	147	85	Carbuncles three times in past year. Paternal grandmother is diabetic.
42	M	71"	162	71	Glycosuria two years ago.
37	M	70"	139	104	Carbuncle on back of neck.
28	F	65"	126	107	Carbuncle on left buttock.
28	F	63"	147	107	Mother has diabetes.
22	F	63"	112	86	Father has diabetes.
24	F	65"	108	91	Fatigue.
48	F	64"	132	82	Mother has diabetes. Itching of hands.
63	F	63"	182	207	Obesity. Faint trace of sugar in urine. (Fasting Blood sugar —186).
60	M	71"	211	89	One recent urine showed one plus sugar.

Discussion

A review of the literature on post-prandial blood sugar values seems to indicate a great deal of uncertainty as to the normal post-prandial values. Many writers and medical teachers still place the post-prandial value above normal fasting levels. This has been emphasized by the questioning of interns and residents, especially at the Philadelphia General Hospital, by Sindoni, Gerber and Bove[14]. The answers given by them are invariably higher than the fasting level, which must be the result of their teaching. Assuming that the post-prandial blood sugar is not above the normal at any time, it would seem that any post-prandial level above the normal fasting level justifies a glucose tolerance test. However, the post-prandial sugar may be used in many cases without employing the glucose tolerance test, especially where symptoms and signs are suggestive of diabetes. Laboratory error excepted, a rise over 120 mg. per 100 cc. post-prandially demands further investigation.

Conclusions

1. An analysis of the post-prandial blood sugar at the two hour level on 245 apparently normal persons and 10 suspected diabetics was performed at the E. I. duPont deNemours Company at Wilmington.

The average probable normal was estimated to be 104.8 mg. per 100 cc. by the Folin-Wu method. Sugars were performed intravenously after a liberal breakfast containing 100 gm. of carbohydrate.

2. From a review of the literature on the subject, and this study, it is concluded that the normal post-prandial sugar at the two hour level is not above the normal accepted range of fasting (80-120 mg. per 100 cc.).

3. The post-prandial sugar may therefore be used at this level for diagnostic distinction between diabetics and non-diabetics. This has already been adopted by many clinics, including the clinic at St. Francis Hospital. Sindoni[15] also uses the post-prandial two hour level in treatment, estimating the normal for an adult diabetic taking insulin and free of diabetic symptoms as being between 170-220 mg. per 100 cc.

4. The post-prandial sugar is of especially good diagnostic value in routine practice because many diabetics run a normal fasting sugar.

REFERENCES

1. Hayes, C. J. H. and Moon, P. T.: Ancient and Medieval History, 629, 1947.
2. Plans and Program of the Diabetes Section of the United States Public Health Service: Proceedings of Amer. Diab. Ass'n, 7: 211, 1948.
3. Blotner, H.: Proceedings of Amer. Diab. Ass'n, 7: 153, 1948.
4. Sindoni, A. M. Jr.: Blood Sugar vs. Urine Sugar J.A.M.A., 112:2503-8 (June 17) 1939., 2595-2600 (June 24) 1939.
5. John H. J.: Diabetes, 27, 1946.
6. Kolmer, J. A.: Clinical Diagnosis by Laboratory Examination, 97, 1943.
7. Yater, W. M.: Fundamentals of Internal Medicine, 523, 1938.
8. Duncan, G. G.: Diseases of Metabolism, 25: 140, 1942.
9. Joslin, E. P., Root, H. F., White, P., Marble, A. M.: The Treatment of Diabetes Mellitus, 7: 124, 1924 .
10. Harrison, T. R.: Principles of Internal Medicine, 611, 1950.
11. Diabetes Guide Book for the Physician: Amer. Diab. Ass'n, 11 W. 42nd St., New York, 18, N. Y., 12-14, 1950.
12. Orent-Keiles, E., Hallman, L. F.: Breakfast Meal ir Relation to Blood Sugar Values, Circular No. 827: Dep't of Agric., Washington, (Dec.) 1949.
13. Sindoni, A. M. Jr.: Fasting Sugar vs. Post-Prandial Sugar, Am. J. Dig. Dis., 13: 6, 2, (June) 1946.
14. Sindoni, A. M. Jr., Gerber, P., Bove, F.: Personal Communication.
15. Sindoni, A. M. Jr.: Personal Communication.

Appreciation

The authors wish to extend their sincere appreciation to Dr. George H. Gehrmann and Dr. Allan J. Fleming, Medical Director and Assistant Medical Director respectively, and the entire staff of the Medical Division of the duPont Company for their valuable assistance and cooperation.

MESENTERIC VASCULAR OCCLUSION[*]

Charles J. Dougherty, M. D.[**]
Wilmington, Del.

Mesenteric vascular occlusion as a clinical entity has received more consideration in the literature during the past several years than formerly. Much of the written material prior to twenty years ago dealt with postmortem findings, although cases of successful operation had been reported from time to time. In 1938, Whittaker and Pemberton reviewed their cases over a ten year period and found this condition to carry a grave prognosis. The operative mortality for this series was approximately 85%, and the non-operative 100%. This and similar reports have caused physicians and surgeons alike to give little thought to a successful termination of this abdominal catastrophe. Several reports have appeared recently wherein prompt operation with resection of the involved bowel has been followed by recovery. Indeed, Christensen, Musgrove and Wollaeger recently reported the case of a 64 year old man in which occlusion of the superior mesenteric artery had produced gangrene of most of the small bowel and the proximal half of the large bowel. Recovery followed extensive resection and anastomosis of the remaining two and a half feet of the jejunum to the left transverse colon. They conducted extensive postoperative studies and found no serious disturbances of nutrition. Fecal fat and nitrogen loss was found to be 20% of that ingested and indicated surprisingly little reduction of small bowel function, considering 60 to 70 per cent of the small bowel had been removed. This is evidence of the great reserve power of the small intestine or a great ability to compensate for the loss of the bowel resected. All of the occlusions of the mesenteric vessels are not as massive as this however, and the surgeon will not know in many cases what he is dealing with until the abdomen is opened as an emergency procedure.

---

[*] Read before Staff Meeting, St. Francis Hospital, April 24, 1951.

[**] Associate in Surgery, St. Francis Hospital.

The occlusive process may involve an artery, a vein or both. The venous occlusion has been found to account for nearly half of the cases, the arterial about a third, and combined arterial and venous the remainder. If arterial, the superior mesenteric artery, less frequently the inferior mesenteric, or both are involved, and at times the occlusion can be confined to the smaller branches. The causes of arterial occlusion arise from embolism or thrombosis. The emboli usually originate from an auricular fibrillation or mural thrombus. The thrombi occur in association with such arterial diseases as thromboangitis obliterans, arteriosclerotic obliterans, periarteritis nodosa, and at the site of operative trauma. The venous occlusion can occur in the portal vein, the main trunks of the superior and inferior mesenteric veins or their branches, and of course, is always a thrombus. The causes of this type include a phlebitis following an intra-abdominal suppurative process such as a perforated appendicitis, stasis from a portal hypertension, various blood dyscrasias, splenic anemia, polycythemia vera, and pressure from various tumors, adhesions or congenital bands.

Trauma, particularly at the time of abdominal surgery not infrequently has been cited as a cause. Thrombosis of artery or vein follows surgery more frequently in patients predisposed to thrombus formation such as splenic anemia and arteriosclerosis. Some cases, such as those suffering from severe arteriosclerosis or advanced liver disease, are moribund at the time occlusion takes place. Occlusion of the inferior mesenteric artery rarely causes much devitalization of the left side of the colon because of the close collateral connection with the middle colic and hemorrhoidal arteries. It is possible to have some collateral circulation established in occlusions of the superior mesenteric artery also, inasmuch as this artery has some connections with the inferior mesenteric and gastric arteries. One case has been observed at autopsy in which the superior mesenteric artery was completely occluded with an organized clot, but the small bowel was normal and the collateral circulation traced to the above connections.

The amount of bowel involved may vary from a few inches of small bowel to the entire small bowel and the right half of the colon. As a rule the occlusion, whether arterial or venous, results in a hemorrhagic infarct, although some areas of ischemic infarction may be seen following the arterial occlusion. Gangrene, of course, closely follows. The onset of gangrene also depends on other factors. If the blood volume is lowered rapidly by a massive occlusion, gangrene will not have time to occur before death. When a shorter segment is involved, gangrene is more apt to be found and the wall of the bowel in this situation is excellent ground for bacterial invasion. Death here occurs from perforation and peritonitis, as well as toxemia.

The majority of the cases of this disease occur in men, as seen in Musgrove and Seybold's series, where 9 out of 13 were of the male sex. It may occur from childhood to old age, the most common age period being between 50 and 70 years, the time when degenerative diseases are apt to be present. From 1938 to 1948, 24 cases of proved mesenteric vascular occlusion were seen at the Mayo Clinic. Thirteen of these underwent operation, an operability rate of 54.1%. Of the 13 operated, 10 survived, a surgical mortality rate of 23%. Of the 11 patients not operated, 100% died. The overall mortality of these 24 cases was 68.9%. The operability, however, has increased since 1938 when it was reported from the same institution to be 31.6%. The reason for this increase in the number of patients operated for this disease is improvement in preoperative supportive therapy. In 1942, Laufman, Scheinberg and Shayel in an analysis of 44 cases over a ten year period, found this disease to comprise 0.105% of the 41,000 surgical admissions to the Michael Reese Hospital. In 68% of these, the condition was unsuspected until operation or autopsy. The preoperative diagnoses most commonly made were ruptured peptic ulcer, cholelithiasis, ruptured appendicitis, ureterolithiasis, and intestinal obstruction.

The symptoms vary considerably, depending on the amount of bowel undergoing infarction, the site of the occlusion, and to a lesser extent whether arterial or venous. There are no distinct or pathognomonic symptoms or signs by which one may decide that the case at hand is an arterial or a venous process or that he is dealing with a mesenteric vascular occlusion at all. The most common and constant symptom is pain. This is a more or less generalized type, and is severe out of proportion to the abdominal physical findings. Definite localized tenderness may not be present over the area of the abdomen where the patient complains of pain. The next most common symptom is vomiting, but this is usually not severe, and fecal vomiting as seen in a mechanical obstruction usually occurs in the terminal stages.

Abdominal rigidity, as well as localized tenderness, will be present when the infarcted or gangrenous bowel produces irritation of the parietal peritoneum. This, however, is often not as marked as that seen associated with a purely inflammatory lesion of the abdomen. Diarrhea will sometimes occur, but constipation is seen more frequently. Bloody stools are present in about one quarter of the patients, usually late in the course of the disease, and are of some diagnostic significance. The temperature is usually found to be subnormal but late in the disease it may rise to 101-106 degrees, due to dehydration, peritonitis and toxemia. The pulse is usually rapid varying from 100 to 180 per minute, and may be weak in volume. The blood pressure is often found to be somewhat low, but usually it does not reach shock levels until late in the process unless the occlusion is massive. In the cases of Laufman et al., shock was present in 45.4% of the patients when admitted to the hospital. The presence of distention is seen late as a rule, and is more common in the venous type. The leucocyte count is elevated higher than is usually encountered in abdominal emergencies, varying from an average of 20,000 in the venous occlusion to an average of 27,000 in the arterial type, with a neutrophil response of over 80%.

Harrington has found that a plain x-ray of the abdomen may show the bowel distended down to the region of the splenic flexure, simulating a mechanical obstruction, and corresponding to the limit of distribution of the superior mesenteric vessels and their anastomoses. He then injects a small amount of barium into the bowel to prove that this is not a mechanical obstruction. The entire picture in some cases may resemble a true mechanical obstruction, but the pain overshadows vomiting, a reversal of the usual picture. Attempts have been made to differentiate an arterial from a venous occlusion clinically, but probably the most important difference will result from the fact that the changes in the bowel progress more slowly in the venous occlusions and the episode will appear to be less dramatic. The disease symptoms were found to be present from 18 hours to 3 days before admission to the hospital in Whittaker and Pemberton's series. Cases have been known, however, to have vague symptoms for as long as two weeks before the diagnosis was made at operation or autopsy.

The present case is another instance in which a mesenteric occlusive process produced gangrene of the bowel, with a successful termination of the case resulting after resection of the involved parts. In most series the diagnosis is rarely made preoperatively, and a mesenteric vascular occlusion is considered a possibility in only about 25% of the cases. In the present case the preoperative diagnosis was that of acute abdomen, probably a perforated appendicitis with a localized peritonitis.

Case Report

History. The patient is a 30-year-old negro who was admitted to St. Francis Hospital on July 17, 1949. His chief complaint was pain in the lower right abdomen of 24 hours duration. For the three days prior to this the pain had been diffuse, noticed mostly around the umbilicus. It was at first of moderate severity and was accompanied by anorexia and nausea. A few episodes of vomiting occurred during the two days before admission. The pain did not seem severe enough at first to seek the advice of a physician, but in the 24 hours prior to admission, it had shifted to the right lower quadrant and was a constant steady type causing discomfort on movement in bed. The bowels were constipated since the onset, and there was no symptomatology referrable to the urinary tract. The review of the systems was negative except for the above symptoms. The past history revealed that the patient had been in excellent health during most of his life time. He stated he had suffered from the common childhood diseases but had no sequelae. In 1944, he was hospitalized in an Army General Hospital for several months with the diagnosis of hepatitis, but recovery was said to have been uneventful. The patient did not know whether or not he had been jaundiced. No further history of illnesses, operations or injuries was elicited.

Examination. The patient was a young, rather slim male adult. He appeared to be in a good state of nutrition and was lying in bed in some degree of pain. The temperature was 98.4 degrees, Pulse 120, respirations 22 and blood pressure 100/60. No pathology was revealed in the head, eyes, ears, nose and throat. The heart and lungs were normal to auscultation and percussion. The abdomen appeared slightly distended and on palpation severe tenderness was present in the right lower quadrant and less marked on the left side of the lower abdomen. Rebound tenderness was elicited. A moderate amount of rigidity was present in the right rectus muscle. Peristalsis was present but diminished over the lower abdomen. Rectal examination revealed some mild tenderness on the right on high palpation. The extremeties were normal as were the tendon reflexes.

Laboratory Findings. Hemoglobin 85%, Red blood cells 4.0 million, white blood cells 20,500, Neutrophils 85%, Lymphocytes 15%. The number of segmenters and non-segmenters was not reported. Urine—specific gravity 1.021, albumin 3 plus, sugar negative, and the microscopic revealed red blood cells, granular casts and white blood cells. No other laboratory studies were considered necessary at the time, and the patient was prepared for laparotomy with the tentative diagnosis of perforated appendicitis with localized peritonitis.

Operation. The patient was given morphine sulphate gr. 1/6, atropine gr. 1/150 and the anesthetist administered a spinal anesthetic of 14 mgm. of pontocaine. An intravenous infusion of 5% glucose in normal saline was started, but while the abdomen was being prepared the patient ceased breathing and the pulse became imperceptible. The anesthetist used suction in the pharynx and by forced respiration revived the patient after several minutes. An intratracheal tube was inserted and it was decided to proceed with the operation under cyclopropane.

A right lower rectus incision was made, and on opening the peritoneum black bowel presented itself. A small amount of brown fluid was present in the peritoneal cavity, which was mopped up with a sponge. On exploration, it was determined that the pathology involved the terminal 6-7 cm. of the ileum and part of the cecum in a gangrenous process, with dark spotted areas on the proximal ascending colon. The mesentery of the ileum cephalad to the area of frank gangrene revealed several black areas each the size of a half-dollar for approximately 18 inches above the ileocecal valve. Because of these areas in the mesentery it was decided to remove this part of the bowel even though there was no frank area of infarction as in the terminal ileum and cecum. Therefore the ileum was divided at this point and the terminal part of the ileum just described was resected. The peritoneum in the lateral gutter was incised and the cecum mobilized with some little difficulty because of the slippery serosal surface which readily peeled off on handling. The ileocecal artery and some branches of the right colic were ligated and the ascending colon divided where the bowel appeared normal. The patient's pulse then was reported by the anesthetist to be 140, and as long as the offending pathology had been removed it was decided to terminate the operation. Accordingly, the ileum and ascending colon were brought out of the incision in the manner of a Mickulitz procedure and a temporary ileostomy established. A stomach tube was inserted and the patient placed under oxygen, with the administration intravenously of emergency blood and additional 5% glucose in normal saline.

The patient reacted fairly well in the immediate postoperative period, the blood pressure being maintained at 120/60, but the pulse rate remained between 125 and 130 per minute until the next day, when it returned to 100. The patient was given 900,000 units penicillin and 2 gm. streptomycin parenterally daily. The temperature rose to 102° rectally on the second and third postoperative days, then dropped to 100 rectally, and remained there for several days.

The Payr clamp on the ileum was removed on the third postoperative day and brown liquid feces was soon expelled and continued to do so. The clamp on the colon fell off on the fifth day and this part of the bowel seemed well anchored in the wound. Intravenous heparin in the dose of 50 mg. every 4 hours was started on the third postoperative day and continued for several days. Adequate fluid in the form of intravenous glucose, amino acids and saline was given to insure a urinary output of 1000 cc. daily, as well as compensate for the loss of fluid and chloride from the gastric suction and the ileostomy drainage. Supplementary vitamins were also added to the infusions, and on the fifth day the stomach tube was removed. No distention was noted during the post operative period. The patient was able to tolerate a non-residue diet and was carried on this, fortified with extra vitamins. The postoperative chemistries done on the third day showed the blood urea nitrogen to be 30 mg., the carbon dioxide combining power 51 volumes per cent, the plasma proteins 7.52 gm. and the blood chlorides 500 mgm. (normal 450-500 mgm.). The hemoglobin was found to be 34%, and several blood transfusions were given to correct this.

Pathology Report. Gross. Forty-four cm. of terminal ileum, the appendix, and cecum. The mesentery of the ileum is blood red in color. The intestine shows little discoloration except at the ileo-cecal region where it is dark red. Tearing away the tissue of the mesentery indicates hemorrhage into the fat and connective tissue but no definitely thrombosed vessel is found.

Microscopic. The mesentery is diffusely infiltrated with blood and the blood within the larger vessels is clotted in layers as would be found in thrombosis although no adherent thrombus is included in the sections studied.

Diagnosis. Consistent with mesenteric thrombosis.

The patient took his diet quite well which was fortified with extra chloride and vitamins and was out of bed with a bag for his ileostomy. On the seventeenth postoperative day he developed a temperature of 103° with a feeble rapid pulse and low urinary output. It was decided the extra salt in his diet was inadequate and the syndrome was due to the fact that he was losing larger amounts of sodium chloride, bicarbonates, and fluid from the ileostomy than were being replaced by mouth. Immediate blood chemistries were obtained which revealed the blood urea nitrogen to be 65 mg., the carbon dioxide combining power 39 volumes per cent, and the blood chloride 400 mg. The patient then received parenteral sodium chloride, glucose and protein with 10 gm. of sodium chloride by mouth, exclusive of the sodium chloride in his diet. In a few days his carbon dioxide combining power, chlorides and urea returned to normal and he was maintained on this regime for the next month.

When it was decided the patient was ready for another operative procedure, he was given the bowel preparation with sulfasuxidine by mouth as had been recommended by Poth. At this operation the portion of the ileum and colon that was above the skin level was amputated and an extraperitoneal ileo-colic end-to-end anastomosis was done. The patient had a normal convalescence from this operation and was passing gas by rectum on the second postoperative day. On the fourth day he had a liquid brown stool, and continued to have one or two formed stools thereafter. He was discharged to his home at about his normal weight and state of nutrition. It was possible to follow him for six months after discharge from the hospital and he was then in a good state of health without any more such episodes.

Comment

This patient presented a symptomatology that resembled in most respects what is often seen in acute appendicitis. His pain, although severe on admission, was mild at the onset. The process was a progressive one ending with parietal peritoneal irritation and did not present the picture of sudden severe abdominal pain with shock and collapse as one would see in a complete occlusion of a large mesenteric vessel with extensive devitalization of bowel. The pain at first was a referred type being diffuse throughout the abdomen. Nausea was present but vomiting was not severe and the patient himself, although confined to bed, did not feel the need for a physician until the day of admission when the abdominal pain became more severe. The laboratory studies showed a severe infectious process as evidenced by the high white count, and the urinary findings may be interpreted as the reaction of the kidneys to the toxemia. Serum amylase studies were not done prior to the emergency laparotomy because the site of the tenderness and rigidity did not seem to indicate an acute pancreatitis. Mesenteric occlusion along with a volvulus of the cecum or small bowel could have been considered preoperatively as possibilities, as well as a perforated Meckel's diverticulum, but one is more prone to think of the simpler and more common diseases when confronted with an acute abdomen. The patient was younger than cases of this disease are likely to occur, but as has been previously stated, it can occur at any age.

The reaction of the patient on the table indicates that the general physical condition of these patients is not good, and the longer the process is allowed to go on the worse the prognosis. I have no doubt that the total blood volume of this patient was reduced preoperatively, but in the absence of clinical dehydration and in the presence of intraperitoneal disease as evidenced by physical examination and laboratory findings, operation could not be postponed for 24 hours or so to replenish fluid which this patient needed. Therefore it was decided to start fluid replacement at the operating table and proceed with the operation. I have no doubt that this factor plus the general toxicity of the occlusive process which notoriously lowers the patient's resistance to any procedure, was responsible for the near fatal reaction of the patient to spinal anesthesia. The ileoestomy, of course, was established because of the poor condition of the patient on the table, and time taken to do an anastomosis after resection might well have resulted in a fatality instead of ending the operation with a living patient.

The reaction of the pabtient to his ileostomy presented some interesting observations. Often patients in poor general condition such as this man, or those suffering from a debilitating disease such as chronic ulcerative colitis where ileostomy must be established, have a stormy time following this procedure. Indeed, the mortality rate in some clinics for ileostomy in the presence of chronic ulcerative colitis has been 15 to 20%. This is a situation where proper adjustment of the blood chemistry is the prime factor for survival of the patient. It is difficult to estimate how much fluid is lost from an ileostomy, inasmuch as one of the main functions of the large bowel is to extract fluid and render the feces in a solid form. When the fecal content is evacuated before reaching the large bowel the intestinal contents are lost in an almost continuous rate and do so whenever a peristaltic wave passes through to the ileum. Interestingly, after about a month this patient had semiformed stools, which shows that the ileum can develop in time some of the functions normally carried out by the colon. Then, besides the fluid loss, chlorides and bicarbonates are lost in fairly large amounts.

In this case, progress was satisfactory in the first two weeks after operation. There were very hot summer days at that time, however, and with the additional loss of chlorides in excessive amounts through perspiration, this patient developed a hypochloremic and acidotic state with a resulting uremia and oliguria. This was easily diagnosed clinically and proven by the blood urea nitrogen 65 mg., carbon dioxide combining power 39 volumes percent and blood chlorides 400 mgm. The treatment here is to restore fluids, supply adequate chlorides in the form of sodium chloride as well as glucose. Serum potassium studies were not done inasmuch as this deficiency was only being spoken of experimentally at that time. Probably a hypokaliemia would have been found if such studies were done, but suffice it to say, the patient responded rapidly without additional potassium except that obtained in the diet.

Gangrenous bowel, although in this case not as extensive as that reported by Christensen et al., is incompatible with life, and removal of the diseased part is imperative. Warren and Eberhard found in their analysis of 73 cases over a 20-year period that if resection of the involved bowel is done at the onset of the acute symptoms, the prognosis is fairly good, but after 24 hours the outlook is poor, and perforation and toxemia will result in a mortality. In this case the patient's symptoms were four days in duration, but fortunately the area involved was not great and the thrombosis was a slowly progressive one. The resection was done widely on either side of the area of infarction in the present case, which agrees with the idea of Brown, who advocates resection of 3-6 inches on either side to prevent extension of the thrombosis. It was found in the studies of Whittaker and Pemberton that the venous thrombosis may start in the finer radicles adjacent to the bowel, or may originate in the portal vein, but progression of the thrombosis is the rule in either the ascending or descending types. They also found that the vascular changes in the bowel were not as rapid following venous thrombosis as that of arterial occlusion. Douglas found that in 4 of his 11 cases the pathologist reported that although there was gross damage to the bowel wall no gross thrombosis or embolism was found in the larger vessels. This suggested to him that in some cases the infarction began in the smaller vessels, either close to or in the vessel wall, and perhaps originating in the intestine itself. In the present case, although the pathologist did not find a definite thrombus in one of the larger vessels, the pattern of the blood is certainly that of prolonged stasis as is seen in vessels distal to the site of a thrombosis. There seems little doubt that from the clinical and pathological findings this process was a selective type of mesenteric thrombosis involving the ileocecal vessels and some of the branches of the right colic, and spreading to the intestinal branches adjacent to the terminal ileum.

Inasmuch as no proof exists as to the etiology of this occlusion, only speculation can be indulged in as to what caused this process. Periarteritis nodosa in a man of this age is a possibility, but absence of any such lesions in the mesentery tend to rule this out. However, one could theorize that the preoperative urine which showed albumin, casts, and blood cells might indicate such a process also present in the kidney. The urine became negative postoperatively, and although periarteritis involving the kidney presents transient urinary findings, one would expect the lesion to be present in the near proximity of the diseased bowel. Probably the most plausible explanation is that with the history of a hepatitis, the occlusion of the ileocecal vein, as well as those adjacent, was due to a slowly progressing thrombosis from stasis of an early portal hypertension as an aftermath of the liver disease. Liver studies were planned after the patient left the hospital, but the patient was reluctant to have these done.

Conclusion

A case of mesenteric vascular occlusion, probably a venous thrombosis, producing gangrene of the terminal ileum and cecum, with resection of the involved elements and the establishment of a temporary ileostomy as a life-saving procedure is presented. After reestablishing the intestinal continuity in a second operation, the patient had a successful conclusion to this often fatal disease.

REFERENCES

1. Brown, M. J.: Mesenteric Vascular Occlusion, A Clinical Entity.
2. Christensen, Musgrove and Wollaeger: Extensive Resection of the Bowel for Occlusion of the Superior Mesenteric Artery: Report of a Case with Postoperative Studies of the Function of the Gastro-Intestinal Tract, Proc. Staff Meetings, Mayo Clinic, 25: 449-459 (Aug. 2) 1950.
3. Douglas, John: Mesenteric Vascular Occlusion, Ann. Surg. 102: 636-644, 1935.
4. Harrington, L. A.: Mesenteric Thrombosis, Amer. Jour. Roent. 58: 637-640 (Nov.) 1947.
5. Johnson, R. E.: Mesenteric Vascular Occlusion, Jour. Mich. St. Med. Soc. 48: 1032-1033 (Aug.) 1949.
6. Larson, Lawrence M.: Mesenteric Vascular Occlusion, S. G. & O., 53: 54-60, 1931.
7. Laubman, Sheinberg and Shayel: Arterial and Venous Mesenteric Occlusion—Analysis of 44 Cases, Amer. Jour. Surg., 58: 84-92, 1942.
8. Musgrove, J. E. and Morlock, C. G.: Mesenteric Vascular Occlusion. Proc. Staff Meetings, Mayo Clinic, 23: 521-528 (Nov. 10) 1948.
9. Musgrove, J. E. and Seybold, William D.: Mesenteric Vascular Occlusion, Surg. Clin. No. Amer. 1063-1071, (Aug.) 1950.
10. Warren, Shields, and Eberhard, Theodore: Mesenteric Venous Thrombosis. S. G. & O. 61: 102, 1935.
11. Whittaker, L. D. and Pemberton, J. deJ.: Mesenteric Vascular Occlusion, J A. M. A. 111: 21-24 (July), 1938.

Travelers Aid

In April, 1925, the now famous "Blue Lamp" was instituted as the symbol of Travelers Aid in railroad stations. And this year, 1951, is the 100th Anniversary of the founding of the organization. All during this year, the 109 Travelers Aid Societies throughout the country will be commemorating the centennial of the half-million dollar bequest left in 1851 by Bryan Mullanphy, Mayor of St. Louis, to help the needy travelers passing through his city to the West. Travelers Aid has always regarded Mayor Mullanphy as traditional great grandfather, since he was the first person to provide funds to support the belief that the person away from home and in difficulty, is a separate and distinct social problem, as contrasted with that of the needy resident of a community. Travelers Aid is now a Red Feather service. Note: June 15 is the anniversary of Mayor Mullanphy's death, and it will be marked by special ceremonies in St. Louis. For full details on the centennial, call or write Mrs. Marguerite Dixon, National Travelers Aid Association, 425 Fourth Avenue, New York 16, N. Y., LE 2-9585. (National Travelers Aid is a member of the United Defense Fund).

New Plan To Aid Medical Schools

A unique philanthropic organization to provide financial assistance for all the nation's hard-pressed medical schools was launched in New York on May 16, 1951.

The undertaking has the sponsorship of industry, the medical profession, organized labor, agriculture, a group of university presidents, and 12 scientific and educational foundations.

The establishment of the National Fund for Medical Education was announced at the annual meeting of the sponsoring group at the Biltmore by former President Herbert Hoover, the Honorary Chairman of the Fund and S. Sloan Colt, Fund President and President of Bankers Trust Company, New York.

At the meeting it was also announced that the American Medical Education Foundation, founded last December by the American Medical Association in Cleveland, will funnel its contributions from doctors through the National Fund organization. The National Fund plans to make these and other grants available immediately to the nation's medical schools, many of which have large deficits.

In announcing the new Fund, Mr. Colt told the meeting its launching culminates two years of planning and organization. He further made known that initial support had come from a wide spectrum of the American community including contributions from the medical profession and such other groups as 18 leading life insurance companies and many industrial corporations. To date, these contributions provide the National Fund with starting resources of more than $1,000,000, toward a $5,000,000 goal for the first year.

Mr. Colt told the meeting that the chief objective of the National Fund is to seek voluntary contributions in order to relieve the acute problem faced by medical schools in endeavoring to maintain high academic standards in the face of crippling budgetary problems.

Mr. Colt said that the Fund trustees had set up appropriate machinery for distributing the money among the nation's medical schools. In developing this machinery, the Trustees were guided by their Advisory Council, which includes university presidents, representatives of the American Medical Association, the Association of American Medical Colleges, and the medical directors of several leading philanthropic foundations.

The Fund, Mr. Colt explained, has as its objective to turn over about $5,000,000 this year to the four-year medical schools and the approved two-year schools in the United States. It is hoped that in future years this figure can be raised substantially as the base of support is broadened nationally.

"This sum will not completely solve the distressing financial problem of American medical education," Mr. Colt said, "but it represents an important voluntary effort to help relieve the acute problem of the medical schools."

General Eisenhower, Mr. Colt explained in telling of the organization of the Fund in 1949, had issued the invitations to those invited as trustees.

"What is most gratifying and significant," Mr. Colt said, "is the fact that this vital project has brought together as trustees a broadly representative group of men and women. Those who organized the Fund may have differing social viewpoints but, insofar as the Fund is concerned, we have united in an endeavor to solve a serious problem for the common good. Unless the medical schools are given financial help, and given it quickly, the standards of medicine may be permanently impaired and the nation's health affected adversely."

Mr. Colt further said, "The Fund is a fine example of practical democracy at work and, for these reasons, it seems hardly necessary for me to mention that it is a nonpartisan body, not permitted by the terms of its charter to seek to influence legislation."

Mr. Colt pointed out that a novel feature of the Fund's machinery makes it possible for every dollar in contributions to flow directly into medical education. Such an arrangement is possible because the administrative costs of the Fund have been underwritten by the following organizations: American Medical Association, The George F. Baker Trust, The Carnegie Corporation of New York, The Commonwealth Fund, Albert and Mary Lasker Foundation, Lilly Endowment, Inc., Josiah Macy, Jr. Foundation, The John and Mary R. Markle Foundation, The Davella Mills Foundation, New York Foundation, Sarah Mellon Scaife Foundation and The Rockefeller Foundation.

Editorials

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building
Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place
M. A. Tarumianz, M. D. ....Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 23 May, 1951 No. 5

Wanted—Three Papers

The scientific program for our Annual Session in Wilmington, October 8-10, 1951, is rapidly taking shape, but we still need three papers from Delaware Doctors. Our March Editorial asking for local volunteers brought in some replies, but not enough. Your officers will be very happy if just one physician from each of our three counties will notify this office immediately "that you can count on me"!

Health Officers Correct On E. M. I. C. Matter

The Executive Committee of the Association of State and Territorial Health Officers met recently in Washington to discuss with representatives of the Children's Bureau, at their request, the question of a program to provide some form of medical care for servicemen's dependents. The committee adopted the following statement:

In the preliminary discussions of the conference, representatives of the Children's Bureau presented factors which suggested growing possibility of introduction of legislation of this type. After review of this information and other information available, the committee determined that there is not sufficient evidence of need to justify the support, promotion or introduction of such legislation at this time.

However, because of the difficulties and strained relations incurred by the establishment and administration of the E. M. I. C. (Emergency Maternity and Infant Care) program during World War II, the committee agreed to review the possible policies and procedures of administration which would be required in such a program if legislation of this nature is introduced, considered, or passed.

The committee does not favor the reactivation of the E. M. I. C. program at this time. It wishes to record its position as not promoting, supporting or seeking legislation to that end. The committee is prepared at any time to review its decisions should additional information be presented to it for further consideration.

In our opinion the attitude by the health officers' organization is sound. Until plenty of folks in Washington make up their minds about a lot of things, we are heartily in favor or keeping new programs and activities in moth balls. Also, if and when it becomes necessary to revive E. M. I. C. it should be generally overhauled. It had too many bugs in it before. Editorial *Ohio S. M. J.*, May,1951.

National Doctors Committee

Dr. Robert Collier Page, Chairman of the National Doctors Committee for Improved Federal Medical Services, recently announced the completion of an advisory committee of experts from every branch of the medical profession. They will consult with the Chairman on matters of policy in the pending campaign to secure wide economies and more efficiency in the present overlapping and competing system of hospital and medical care operated by the government. Dr. Page, who is Medical Director of Standard Oil Company (New Jersey), also announced that his general committee will carry on an educational program for the benefit of 178,000 doctors. He said that this project is rapidly growing.

The National Doctors Committee is an affiliate of the Citizens Committee for the Hoover Report, which is urging passage of the recommendations of the bipartisan Hoover Commission for the unification of the various governmental medical agencies under a single authority. The slogan of the Doctors Committee is "Not more government in medicine but better medicine in government."

"The interest in our general committee is surprisingly large, and very widespread." Dr. Page said. "I think every state in the nation will have a good representation of medical men. Doctors, perhaps more than any others, are aware that the existing competition for medical and technical manpower by the several federal hospital systems is depriving the general public of certain services to which they are entitled. They realize that this waste must be eliminated for the benefit of all our people."

The advisory committee has been formed to include high-ranking men in the 20 major divisions of medicine and surgery and the allied technical skills, as follows:

Anesthesiology: Charles Fletcher McCuskey, M. D., Los Angeles, California; Dermatology and Syphilology: Donald M. Pillsbury, M. D., Philadelphia, Pennsylvania; General Practice: Samuel Arthur Garlan, M. D., New York, N. Y. and Rufus B. Robins, M. D., Camden, Arkansas; Internal Medicine: Maxwell Myer Wintrobe, M. D., Salt Lake City, Utah; Cardiology: George Edward Burch, M. D., New Orleans, Louisiana; Medical Education: Richard Hale Young, M. D., Chicago, Illinois; Neurological Surgery: Howard Clifton Naffziger, M. D., San Francisco, California; Obstetrics and Gynecology: Charles Denton Kerr, M. D., Houston, Texas; Ophthalmology: Donald Marshall, M. D., Kalamazoo, Michigan; Orthopedic Surgery: Lewis M. Overton, M. D., Albuquerque, New Mexico; Otolaryngology: Clair Michael Kos, M. D., Iowa City, Iowa.

Also, Pathology: Thomas Byrd Magath, M. D., Rochester, Minnesota; Pediatrics: Lee Palmer, M. D., Louisville, Kentucky; Physical Medicine: George D. Wilson, M. D., Asheville, North Carolina; Plastic Surgery: James Barrett Brown, M. D., St. Louis, Missouri; Preventive Medicine and Public Health: Brig. Gen. James Stevens Simmons, M. C., Boston, Massachusetts; Psychiatry and Neurology: Herbert Spencer Ripley, M. D., Seattle, Washington; Radiology: Arthur Bradley Soule, Jr., M. D., Burlington, Vermont; Surgery: Richard Kennedy Gilchrist, M. D., Chicago, Illinois; Thoracic Surgery: Henry Swan, M. D., Denver, Colorado; Urology: Charles Rieser, M. D., Atlanta, Georgia.

OBITUARY

I. Wallace Mayerberg, M. D.

Dr. Mayerberg, one of three physician brothers, died on May 2, 1951 at his home. He had been ill two years. He retired from the DuPont Company in December, 1949.

Dr. Mayerberg was born in Statesville, N. C., a son of Julius L. and Rachael Mayerberg.

A graduate of the University of North Carolina, Dr. Mayerberg took his medical degree at Jefferson Medical College, Philadelphia, in 1907. He interned at the Norristown General Hospital, Norristown, Pa., for one year.

He then went to Selma, N. C., where he practiced general medicine for 23 years. Dr. Mayerberg took special work in diseases of the eye, ear, nose and throat at the Polyclinic Hospital, New York City, for two years. He practiced his specialty in Dover for ten years, then went with the medical department of the DuPont Company.

Dr. Mayerberg was a former member of the New Castle County Medical Society, the Medical Society of Delaware and the American Medical Association. He was a member of the Wilmington Kiwanis Club; a past president of the Dover Kiwanis Club and a past president of the Selma, N. C., Kiwanis Club. He was also a 32nd degree Mason.

Surviving him are his wife, Mrs. Florence Maude Mayerberg; one son, Wilson Lewis Mayerberg of Teaneck, N. J.; a grandson, Willson Lewis Mayerberg, Jr.; and two brothers, Dr. Emil R. Mayerberg, Wilmington, and Dr. Samuel S. Mayerberg of Kansas City, Mo.

The funeral took place from the Yeatman Funeral Home on May 4, 1951, the Rev. Donald H. Douds, pastor of Hanover Presbyterian Church, officiating. Interment was at Highspire, Pa., on May 5, 1951.

BOOK REVIEWS

Functional Anatomy of the Limbs and Back. By W. Henry Hollinshead, Ph. D. Pp. 341, illustrated. Cloth, $6.00. Philadelphia: W. B. Saunders Company, 1951.

Although the title is limited to the Limbs and Back, actually the entire body is covered in the text. The contents are divided into five sections as follows: (1) The Organization of the Body; (2) The Upper Limb; (3) The Back; (4) The Lower Limb; (5) The Head, Neck and Trunk.

The text is well illustrated with anatomical drawings which show clearly the functions of muscles and the movements of the body.

This book is intended for the non-medical student of muscular movement, but the subject is so clearly presented that physiotherapists, occupational therapists, physical educators and physicians who treat poliomyelitis should find it very instructive. It forms a good basis for the study of the fundamental movements of the body through the proper understanding of the morphological basis underlying function of muscles.

It is also going to fill the gap, thus far not emphasized, in the diagnosis and management of neuromuscular conditions, including poliomyelitis. The general practitioner interested in these diseases should get well acquainted with the "Functional Anatomy of the Limbs and Back."

Physiology of the Eye, Clinical Application. By Francis Reed Adler, M. D., Professor of Ophthalmology, University of Pennsylvania, and Consulting Surgeon, Wills Hospital, Philadelphia. Pp. 709, with 319 illustrations, including 2 in color. Cloth, $12.00. St. Louis: C. V. Mosby Company, 1950.

We are now enjoying an era in medicine in which the application of physiology to the study of disease is a fundamental requirement. Thus, "The Physiology of the Eye" offers to the practicing ophthalmologist, as well as the general practitioner, and to the student, the recent findings which can be applied clinically.

The contents of the book are divided into twenty-two chapters. Each subject is discussed in detail in an easily read and understood language, which is a departure of the highly scientific terminology one expects to find in a book of this nature. The interest of the reader is maintained to the end of each chapter because of the practical correlation of the physiology of the part discussed to the clinical application. This has made it necessary for some of the chapters to be more lengthy than usual.

Some of the interesting phenomena discussed with each part of the ocular system are the metabolism, the nutrition, the chemistry, and the method of excretion of the metabolites. Chapter X on Ocular Motility will be found very informative inasmuch as it describes the gross anatomy and action of each ocular muscle and the mechanics involved in the various operative techniques for strabismus.

A complete bibliography is given at the end of each chapter for those interested in research references.

Physiology of the Eye is highly recommended for the general practitioner as well as for the eye specialist.

The Science of Health. By Florence L. Meredith, M. D., Second Edition. Pp. 452, Cloth, $3.75. Philadelphia: Blackiston Company, 1951.

This is a comprehensive book on personal and public hygiene, with the various systems of the human body analyzed in a language that can be understood by the lay student who is attempting to learn the structure and function of the human body. The emphasis is placed on the maintenance of personal, physical and mental health, and in order to accomplish this a basic knowledge of the anatomy, physiology and chemistry of the human body is discussed.

The contents of the book are divided into five parts: (1) Introduction; (2) Daily maintenance of Health; (3) Major Health Problems in the United States; (4) Mental Health; (5) The Next Generation.

This is an excellent text book for hygiene courses for college students, nurses, and sociologists.

1789—MEDICAL SOCIETY OF DELAWARE—1951

OFFICERS

President, Charles E. Wagner, Wilmington
President-Elect, Ervin L. Stambaugh, Lewes
Secretary, Andrew M. Gehret, Wilmington
Vice-President, Benjamin F. Burton, Dover
Treasurer, Joseph M. Messick, Wilmington
Executive Secretary, W. Edwin Bird, M. D., 822 N. American Bldg., Wilmington

American Medical Association (1951) Delegate: James Beebe, Lewes
Alternate: C. E. Wagner, Wilmington
Representative to Delaware Academy of Medicine, W O. LaMotte, Wilmington

STANDING COMMITTEES

Scientific Work

R. W. Comegys, Clayton
O. A. James, Milford
A. M. Gehret, Wilmington

Medical Education

R. O. Y. Warren, Wilmington
J. L. Fox, Seaford
H. W. Smith, Harrington

Publication

W. E. Bird, Wilmington
M. A. Tarumianz, Farnhurst
A. M. Gehret, Wilmington

Public Laws

J. S. McDaniel, Dover
J. W. Lynch, Seaford
E. R. Mayerberg, Wilmington
J. D. Niles, Middletown
V. D. Washburn, Wilmington

Budget

J. M. Messick, Wilmington
Charles Levy, Wilmington
M. A. Tarumianz, Farnhurst
W. T. Chipman, Harrington
J. R. Elliott, Laurel

SPECIAL COMMITTEES

Advisory, Woman's Auxiliary

Roger Murray, Wilmington
Charles Levy, Wilmington
J. M. Messick, Wilmington
J. J. Lazzeri, Smyrna
J. R. Elliott, Laurel

Cancer

D. M. Gay, Wilmington
J. V. Casella, Wilmington
J. F. Hynes, Wilmington
E. G. Laird, Wilmington
W. W. Lattomus, Wilmington
C. J. Prickett, Smyrna
R. R. Layton, Dover
James Beebe, Lewes
Bruce Barnes, Seaford

Tuberculosis

L. D. Phillips, Marshallton
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
J. S. McDaniel, Jr., Milford
L. C. McGee, Wilmington
J. M. Messick, Wilmington
C. J. Prickett, Smyrna
William Marshall, Jr., Milford
C. M. Moyer, Laurel

SPECIAL COMMITTEES

Maternal and Infant Mortality

A. H. Williams, Laurel
C. T. Lawrence, Jr., Wilmington
C. L. Hudiburg, Wilmington
S. W. Rennie, Wilmington
R. O. Y. Warren, Wilmington
B. F. Burton, Dover

Mental Health

G. W. K. Forrest, Wilmington
J. S. McDaniel, Jr., Dover
O. V. James, Milford

Industrial Health

L. C. McGee, Wilmington
G. H. Gehrmann, Wilmington
H. L. Springer, Wilmington
E. H. Mercer, Dover
H. V'P Wilson, Dover
D. L. Bice, Seaford
A. C. Smoot, Georgetown

Vocational Rehabilitation

James Beebe, Lewes
G. A. Beatty, Wilmington
I. M. Flinn, Wilmington
T. B. Strange, Wilmington
W. C. Pritchard, Smyrna

Heart Disease

E. R. Miller, Wilmington
A. H. Clagett, Jr., Wilmington
E. M. Krieger, Wilmington
F. R. Everett, Dover
R. L. Klingel, Lewes

Diabetes

L. B. Flinn, Wilmington
J. R. Durham, Jr., Wilmington
Charles Levy, Wilmington.
L. L. Fitchett, Milford

Arthritis

A. J. Heather, Wilmington
I. M. Flinn, Wilmington
A. R. Shands, Wilmington
C. C. Fooks, Milford
O. A. James, Milford

Health & Sanitation

E. R. Mayerberg, Wilmington
G. A. Beatty, Wilmington
V. D. Washburn, Wilmington
W. T. Chipman, Harrington
H. V'P. Wilson, Dover
Bruce Barnes, Seaford
E. L. Stambaugh, Lewes

Fees for Welfare Patients

R. W. Comegys, Clayton
A R. Crutchley, Middletown
J. W. Lynch, Seaford

SPECIAL COMMITTEES

Medical Service and Public Relations

E. R. Mayerberg, Wilmington
B. M. Allen, Wilmington
W. O. LaMotte, Wilmington
C. L. Munson, Wilmington
W. M. Pierson, Wilmington
J. S McDaniel, Dover
H. V. P. Wilson, Dover
J. W. Lynch, Seaford
O. A. James, Milford

Rural Medical Service

J. R. Downes, Newark
C. R. Donoho, Newark
J. D. Niles, Middletown
C. J. Prickett, Smyrna
H. W. Smith, Harrington
Bruce Barnes, Seaford
H. S. Riggin, Seaford

Care of Colored People

H. T. McGuire, New Castle
Conwell Banton, Wilmington
S. G. Elbert, Jr., Wilmington
I. J. MacCollum, Wyoming
J. L. Fox, Seaford

National Emergency Medical Service

J. R. Beck, Wilmington
C. L. Munson, Wilmington
W. F. Preston, Wilmington
S. H. Stradley, Wilmington
V. D. Washburn, Wilmington

Medical Economics

Ira Burns, Wilmington
J. S. McDaniel, Jr., Dover
J. E. Marvil, Laurel

Hospitals and Practice of Medicine

J. W. Howard, Wilmington
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
W. O. LaMotte, Wilmington
C. E. Wagner, Wilmington
J. S. McDaniel, Dover
J. B. Waples, Georgetown

Social Hygiene

A. D. King, Wilmington
E. H. Mercer, Dover
James Beebe, Jr., Lewes

Grievance Board

G. W. K. Forrest, Wilmington
I. L. Chipman, Wilmington
J. D. Niles, Middletown
I. J. MacCollum, Wyoming
James Beebe, Lewes

WOMAN'S AUXILIARY

Mrs. Douglas M. Gay, *President*, Wilmington
Mrs. S. W. Rennie, *President-elect*, Wilmington
Mrs. E. T. O'Donnell, *Corresponding Secretary*, Wilmington
Mrs. Andrew M. Gehret, *Recording Secretary*, Wilmington
Mrs. Lawrence W. Fitchett, *Treasurer*, *Milford*

NEW CASTLE COUNTY MEDICAL SOCIETY

Meets Third Tuesday

V. D. Washburn, *President*
W. W. Lattomus, *President-elect*
S. H. Stradley, Jr., *Vice-President*
H. H. Stroud, *Secretary*
C. M. Bancroft, *Treasurer*
E. C. Syrovatka, *Executive Secretary*

Councilors (1952): L. C. McGee, H. T. McGuire, J. C. Pierson.

Delegates (1951): E. M. Bohan, Ira Burns, Junius A. Giles, A. D. King, E. G. Laird, W. O. LaMotte, Sr., Charles Maroney, E. M. Mayerberg, W. M. Pierson, Edward Parvis, O. N. Stern, H. H. Stroud, M. A. Tarumianz.

Alternates (1951): Steven Bartoshesky, Joseph Beck, Allen Fleming, Mildred Forman, David J. King, A. G. Lessey, Wm. T. McLane, Douglas Sanders, Paul Shaw, Roger B. Thomas, R. O. Y. Warren.

Delegates (1951-52): N. L. Cannon, I. L. Chipman, Sr., J. A Giles, A. L. Heck, Charles Levy, C. L. Munson, M. B. Pennington, J. C. Pierson, S. H. Stradley, Jr., G. W. Vaughn, V. D. Washburn

Alternates (1951-52): L. V. Anderson, R. E. Allen, J. W. Barnhart, J. M. Barsky, Jr., W. W. Briggs, Italo Charamella, J. A. Chrzanowski, C. T. Lawrence, F. A. Jones, C. P. Johnson, T. E. Resnick, F. S. Skura, H. A. Tarrant.

MEDICAL COUNCIL OF DELAWARE

Hon. Charles S. Richards, *President*; Joseph S. McDaniel, M. D., *Secretary*; Wallace M. Johnson.

KENT COUNTY MEDICAL SOCIETY

Meets First Wednesday

R. R. Layton, Jr., *President*, Dover
J. B. Baker, *Vice-President*, Milford
J. S. McDaniel, Jr., *Secretary-Treasurer*, Dover

Councilors: C. J. Prickett, Smyrna and Wm. Marshall, Milford.

Delegates: H. V. P. Wilson, Dover, and I. J. MacCollum, Wyoming.

Alternates: J. S. McDaniel, Dover, and H. W. Smith, Harrington.

DELAWARE STATE DENTAL SOCIETY

J. S. Mack, *President*, Seaford
J. F. Maguire, *1st V. P.*, Wilmington
H. L. Kurfirst, *2nd V. P.*, Wilmington
James Krygier, *Secretary*, Wilmington
Louis Kreshtool, *Treasurer*, Wilmington
P. E. Musselman, *Delegate A.D.A.*, Newark.
Clyde Nelson, *Alternate A.D.A.*, Milford.

DELAWARE STATE BOARD OF HEALTH

J. D. Niles, M. D., *President*, Middletown; I. J. MacCollum, *Vice-President*, Wyoming; C. E. Moore, D. D. S., *Secretary*, Seaford; Bruce Barnes, M. D., Seaford; Mrs. C. M. Dillon, Wilmington; Mrs. A. Louise Cochran, Middletown, R1; Howard N. Stayton, M. D., Wilmington; Mrs. N. W. Voss, Wilmington. Floyd I. Hudson, M. D., *Executive Secretary*, Dover.

BOARD OF MEDICAL EXAMINERS

J. S. McDaniel, *President-Secretary*; H. V. P. Wilson, *Assistant Secretary*; W. E. Bird, J. E. Marvil, G. A. Beatty.

SUSSEX COUNTY MEDICAL SOCIETY

Meets Second Thursday

O. A. James, *President*, Milford
J. L. Fox, *Vice-President*, Seaford
T. J. Tobin, *Secretary-Treasurer*, Milton

Councilors: J. W. Lynch, Seaford; A. C. Smoot, Georgetown.

Delegates: Bruce Barnes, Seaford; D. L. Bice, Seaford; C. M. Moyer, Laurel; G. M. Van Valkenburgh, Georgetown.

Alternates: W. G. Hume, Selbyville; R. L. Klingel, Rehoboth; A. C. Smoot, Georgetown; E. L. Stambaugh, Lewes.

DELAWARE ACADEMY OF MEDICINE

Open 10 A.M. to 5 P.M.

B. M. Allen, M.D., *President.*
W. M. Pierson, M.D. *First Vice-President.*
R. R. Wier, D.D.S., *Second Vice-President.*
A. M. Gehret, M.D., *Secretary.*
I. M. Flinn, M.D., *Treasurer.*
E. C. Syrovatka, J. D., *Librarian.*

DELAWARE PHARMACEUTICAL SOCIETY

Walter A. Schueler, *President*, Wilmington.
Harry C. Helm, *First Vice-President*, Dover.
Earl Hastings, *Second Vice-President*, Selbyville.
Walter E. Brown, *Third Vice-President*, Holly Oak.
J. Wallace Watson, *Secretary*, Edge Moor.
Albert Dougherty, *Treasurer*, Wilmington.

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 6

JUNE, 1951

Per Copy, 50c
Per Year, $4.00

CORONARY ARTERY DISEASE*

William D. Stroud, M. D.**
Philadelphia, Pa.

I was fascinated by Dr. Hughes' discussion. I was very much interested in what he said about these people who go to bed and just fold up. It reminds me of the famous story of S. Weir Mitchell, who advocated rest. He had a prominent society lady in Philadelphia whom he put to bed for six months, and she refused to get up. So he said, starting to take his coat off, "If you don't get up, I am going to get in bed with you." So she got up promptly.

I was also interested in what Dr. Ingram said about the fear complex in coronary occlusion and myocardial infarction, because I feel that so many doctors and so many nurses instill in these patients a fear. They are not allowed to turn from one side to the other. They are not allowed to listen to their radio, and they are not allowed to have the bed elevated 45 degrees.

I asked Dr. Hughes whether fear increased the action of the adrenals. I had always been taught that it did, and that is the reason a dog could tell whether you were afraid of him or not, because he smelled the increased adrenalin in the blood stream. I believe that very often such treatment will produce ventricular fibrillation and sudden death from the increased adrenalin.

A patient I saw about three years ago had a coronary occlusion down in Miami. The doctor kept him in bed for six weeks and then told him that he could get up and walk four steps to the chair, but if he walked five he would drop dead. The next day he could walk six steps but if he walked seven he would drop dead. Well, this was in February and he arrived in Philadelphia in June, with three nurses, each on eight hour duty around the clock. He wouldn't be left alone; he was scared to death. He was a young man of 42. His blood pressure was 120 over 70, his electro cardiograms were normal, he had no enlargement of his heart. He was in good shape; he had made a perfect recovery. So I told him to get rid of his nurses and to go back to his business out in Port Allegheny in Pennsylvania. He was president of a concern there. I told him to go to work and forget about his heart attack. He said, "Can I play golf?" I said sure. He had been home about two weeks working full time and thought he would like to play a little golf. So he went to his family physician and asked if he could play golf. This doctor said, "Play golf? After a coronary? That would be suicide." Well, he was back in Philadelphia with the three nurses in another week!

So I decided we had to do something about this situation. He had a cottage in Ocean City, New Jersey. I got an associate of mine, Dr. Joseph Wagner, to take him down to Ocean City and give him the works. This was on the 15th of July, and he had had his occlusion in February. I got this letter from Dr. Wagner on the 15th of August:

"Together we engaged in a program of physical exercise which developed to the point that on or about August 15 he was capable of playing 18 holes of golf per day, swimming half a mile, walking four miles, and bicycling ten miles, all in one day! Under this program he gained in appetite, his weight increased 18 pounds, and his confidence returned. He has gone back to his job as president of his company."

He comes in now about every six months and is doing very well, playing golf and so forth.

I don't advocate that treatment for every case of myocardial infarction, but it just shows you how important the mental attitude is towards this situation and how well these cases can do after an adequate rest, six weeks to two months, or sometimes three months if it is a large vessel.

---

*Read before the Medical Society of Delaware, Dover, October 3, 1950.

**Professor of Cardiology, University of Pennsylvania Graduate School of Medicine.

After that preamble, I would like to talk about coronary insufficiency, or angina of effort, if you want to call it that. Personally, I never tell a patient that they have angina because it makes them feel they are going to drop dead any minute. If they ask me if they have angina pectoris, I always say no. If they ask, "What do I have?", I say, "You have temporary anoxemia of a portion of the myocardium." That holds them for a while and impresses them with your vast knowledge. They don't know what you are talking about—most doctors don't know what you are talking about either—but that is what we think it is.

That is the reason I believe we should teach these patients to use nitroglycerine better than we do. For some reason or other, the average patient gets the idea from the doctor that he shouldn't take nitroglycerine when he gets chest pain unless it is excruciating. He doesn't realize that he can take 25 or 30 one-hundredths of a grain, or two hundredths, a day if necessary. I think they should be trained in this and I think they should be trained also to use it prophylactically. That is, to put a tablet under their tongue just before they do something, like walking in the evening after a meal, that brings on this pain.

I have told this a lot of times; I'm afraid most of you have heard me tell it. But Dr. Tait McKenzie was a patient of mine, a sculptor, a professor at the University of Pennsylvania. He is the only man who ever left me his heart in his will. He said, "I leave my heart to Dr. William D. Stroud so that he may examine it and see if his diagnosis was correct or not." He and Mrs. McKenzie were very fond of the movies. They lived at 20th and Pine. They used to walk across Rittenhouse Square after dinner to the movies at 19th & Chestnut Sts., and every time Tait would get to that statue of a goat in Rittenhouse Square, he would get his pain. So I suggested that just before he left the house he put a tablet of nitroglycerine under his tongue, and just before he got to the goat he put another tablet under his tongue. He got away with that for ten years.

A fellow named Bert Kelly, who was one of the founders of the Mask and Wig Club at the University of Pennsylvania, was quite a comedian. His famous trick was to say a poem in Irish brogue about David and Goliath. The climax was when David would reach for his slingshot and put the stone in the slingshot and sling it around his head three times and let it go at the giant. Well, on the third swing Bert would get this pain. So I suggested that instead of reaching into his hip pocket, he reach into his vest pocket and get a tablet of nitroglycerine, and on the first swing slip it under his tongue. He got away with that for a long time. I was the only one in the audience that knew what was going on.

It shows you that you can teach these people to use nitroglycerine prophylactically.

I have a 65 year old ex-general as a patient, who about six years ago had this pain and thought he was going to die. I couldn't persuade him to use nitroglycerine. I suppose because he was a general he was afraid it would blow the top of his head off. Anyway, he lived out in Villanova and came in one morning in 1944, getting off the train at 30th Street Station about ten o'clock in the morning. Well, it was when they were sharing the cab business. He got into a cab and a gentleman was sitting in the seat, and just as he got in he noticed this gentleman put a tablet under his tongue. My patient said, "Was that nitroglycerine?" He said sure. Then he asked, "How many do you take a day?" This was about ten o'clock in the morning. The man replied, "Well, this is the sixth I have taken this morning." He asked, "How long have you been doing this?" The man said, "19 years."

Well, that did this patient of mine more good than anything I had ever been able to tell him, because he realized that if he learned how to live with his coronary insufficiency business, that it doesn't necessarily have to shorten your life.

Sir James Mackenzie, with whom I worked in St. Andrew's in 1920, was the first man that made me realize this. He had a coronary thrombosis when he was 49, and when I was working with him he was 67 and he was making that number one St. Andrew's course in 82 and 84 and 86, and I was getting 122 out in the sand dunes. He lived to be 73.

He also told me a story; I'm sure you have all heard it because I told it to Morris Fishbein and it came out in the AMA Journal, about the Scotchman who was coming from London to Edinburgh. He was in the last compartment of the last car on the train. You know back in those days they didn't have any aisles in the English trains. So every time the train would stop, he would jump out, run up the platform, up to the ticket window and back to his seat. There were a good many stops between London and Edinburgh, and he had done this about 20 times. Finally the chap sitting next to him said, "Look here Sandy, if you keep that up you are going to hurt your heart." He said, "That's just the trouble. I have been to London and a specialist there tells me I have heart disease, and I'm afraid I may drop dead any minute, and I don't want to buy a ticket any farther than I can use it."

So that is the average person's attitude towards coronary artery disease. You've got to be careful what you tell these patients.

As to the cause of coronary artery disease, I don't know what it is. I don't think anybody else knows why people seem to deposit cholesterol crystals on the intima, or media of the coronary vessel, or even in the cerebral vessel. Personally, I think it is mainly an inherited situation. As Sir William Osler said, "If you want to live a long life pick your parents." I believe it is an inherited inability to completely burn fats, and for some reason or other it is deposited in the media or intima of the coronary or cerebral vessels. That is a very discouraging attitude because, as I say, you can't do much about inheritance.

(First slide) This is an old slide as to the possible causes of coronary artery disease, and the things that we might be able to clear up. Frequent emotional upsets—having five children of my own I don't know how you are going to stop that business!

Infection—I think the otolaryngologists have done a pretty good job of taking all the tonsils out of everybody in the United States. I think the dentists have done a pretty good job of extracting most of our teeth.

As to streptococcus infections, Karsner published an article some 20 years ago of a number of children who died of rheumatic heart disease, and showed damage to the coronary vessels similar to athero-sclerosis that you see in adults.

Diet, of course, is an awful racket. I don't know whether you all read the Reader's Digest, but apparently if you don't eat eggs or ice cream or butter you won't get coronary atherosclerosis. I am sort of wondering about that. I do think that every patient that has coronary insufficiency ought to have a blood cholesterol, and if his blood cholesterol is above normal then I think he should go easy on his fats. But I don't think that you should just tell a person, simply because he has a little substernal pain on effort or he has had a myocardial infarction, that he can't have his eggs or ice cream or a little butter on his corn.

Salt restriction—there has been a recent article about these attacks of pain during the night that a low salt diet and even a mercurial seems to help. I have had very little experience with that, but it does seem to me that we doctors are too likely to get a hunch about diet and generalize about them. I remember when I was an intern in 1917; all the enthusiasm about the treatment of hypertension was that a person shouldn't eat meat. Well now, thank heavens, that is all changed. I think it was mainly due to an experiment that was carried on at Cornell University some 15 years ago. There were two explorers in their fifties who had run out of everything up in the Arctic regions, except meat. They lived on this meat for about six months and did very well. When they came back they went to Cornell University and offered themselves as guinea pigs. They said they would go on a meat diet for two years, absolutely strictly meat and water, and then would let them examine them from time to time. Well, they were examined every month. They took their blood pressures and electrocardiograms and their blood chemistries and so forth, and at the end of two years the only change that could be demonstrated was that one of them was constipated and the other had diarrhea.

I think that is typical of this diet proposition. It is an individual setup, and you've got to study each one of your patients before you hand out a typewritten diet for him to go on.

Thanks to the advertisements in the trolley cars and magazines, most of us have a sufficient intestinal elimination.

Thank God alcohol is good for this thing.

I think we have to agree that nicotine does constrict vessels and that patients that are having substernal pain on effort shouldn't smoke. If they are not having substernal pain, I don't see any reason why they shouldn't smoke. We have no proof that nicotine produces athero sclerosis or arterio sclerosis.

Coffee or tea—I see no reason for restricting patients with coronary artery disease from them.

Diabetes, even when well controlled with insulin or diet seems to have some effect on the production of athero sclerosis or arterio sclerosis.

I don't believe there is such a thing as an athlete's heart.

I think too many rheumatic heart children are made invalids just because of a murmur. About 15 years ago, I think it was, a Harvard crew came back for their 50th anniversary at Cambridge. They were all over 70 and they rode down the Charles River in their shell, and the only member of the crew who was dead was the cockswain. He died of a coronary thrombosis. So I feel that physical exercise, unless you are getting along a little bit and unless you have a hypertension, does an individual no harm from a cardiovascular standpoint.

Whether long hours of nervous tension has anything to do with it or not, it is certainly a good plan for us doctors to take more vacations and to advise our patients to take more vacations.

(Next slide) This slide I think illustrates beautifully what a coronary thrombosis is. You can see the atherosclerotic placques there, you can see where the clot has formed, you see the atrophy of the ventricular muscle, and you can see the formation of mural thrombi. That is the reason it is so hard to be positive that a patient is going to get over an attack of coronary occlusion, even if they live a couple of weeks, because they may throw one of those emboli into the brain or into the lung at any time. Dr. Vander Veer is going to talk to you about that in the next paper.

(Next slide) Is there such a thing as silent coronary occlusion? In 1940 when the College of Physicians met in Boston, Dr. Roger Lee asked me to talk on silent coronaries. Well, I never thought there was such a thing. I had Dr. Joseph Wagner look up a hundred cases at the Pennsylvania Hospital and the Bryn Mawr Hospital and go through their histories very carefully, selecting only proven cases of myocardial infarction either by electrocardiogram or by autopsy. He found that out of those 100, 15 had never had any type of pain at all—chest, arm, back, any type.

So that apparently there is such a thing as a silent coronary thrombosis. I know Dr. Herrman Blumgart feels that in his studies very strongly. But in all these 15 cases there was evidence of some circulatory disturbance, either a drop in blood pressure or development of pulmonary edema, or something of that kind, even though pain was not present.

(Next slide) As to the relationship of gall bladder disease and coronary artery disease, I believe there is some relationship. Certainly the late Dr. Eliason published a paper in which there were changes in T-wave curves and after the gall bladder was removed the tracings came back to normal and the premature contractions disappeared. If you put a balloon in the gall bladder of a dog and pump it up, you can produce premature contractions and changes in the electrocardiogram.

The first patient that interested me in this was Cecil Lean back in 1927 when he was playing in "No, No, Nanette" in Philadelphia. He was about 45 then, short and with a high diaphragm. He came to see me because he had a little substernal pressure after the show when he drank a bottle of beer and ate a sandwich. He had left axis deviation in his electrocardiograms and his T-waves were a little on the low side. I thought that at his age he was exercising too much in these musical comedies. His wife said, "Doctor, I don't think it is his heart; I think it is his gall bladder." So we had an X-Ray and his gall bladder was full of stones. We took his gall bladder out and he went on and was in four or five other musical comedies. The only thing that saved my dignity was that five years later he dropped dead from a myocardial infarction. So both his wife and I were right in our diagnosis.

It shows that if you have coronary disease and you have a gall bladder with stones that you can get along with that gall bladder out, and they stand operations very well, even with coronary artery disease. Dr. Ravdin has a big series he has operated upon, and he is very enthusiastic over his results. So that with angina of effort, you ought to consider the gall bladder.

This next patient we thought had gall bladder disease, but she absolutely refused to have a gall bladder X-Ray. So we treated her for coronary artery disease. Three years later she had a similar attack while abroad, and this Italian heart specialist in Monte Carlo said she couldn't live another day, and gave her sister an undertaker's card. They seem to work together over there! When she lived, he took the card back with disgust. She went along and finally died in a paroxysm of bronchial asthma. We felt at autopsy that there were not enough changes in her coronary vessels to account for attacks. We thought they were probably all gall bladder in origin.

In these cases of myocardial infarction, if you get auricular fibrillation, or if you get evidence of congestive failure, I feel there is no contra-indication to digitalization. I know there are some articles in the literature that feel that there is, but personally I have never seen any bad effects, and I think when digitalis is indicated in acute myocardial infarction it should be used.

(Next slide) As to patients with coronary artery disease and hypertension, it is a big question as to how many of them should have a total sympathectomy. I show you this case because I think it is extraordinary. A doctor in Johnstown, Pa., sent him to me in 1944. We digitalized him, and you can see the changes in his diameters just from that. So some of these total sympathectomies are very effective, but I think only about 30% of them are.

Finally, there are two points that I would like to make, in the treatment of myocardial infarction. One thing I ask my friends when I get my coronary is that they will let me use a commode instead of a bed pan. I am very serious about that. I think I have made more friends in consultation by persuading the family physician to let the patient slide out on a commode instead of wrestling with a bed pan, than I have in any other way. A study in Bellevue, New York, was made of 100 patients, 50 of whom were studied to determine the foot pounds of energy used in using a bed pan, and on the other 50 the foot pounds of energy used in using a commode. It was found that the expenditure of energy was 20% less in the patients that slid out on to a commode than in those using a bed pan.

Finally, the one thing that I think I have made my little reputation on is about the use of alcohol in coronary artery disease. About three years ago I was down in Memphis, Tennessee, addressing the Southern members of the American College of Physicians, and I said that if you had coronary artery disease and you had to smoke, that you ought to use enough alcohol to counteract the effect of the nicotine. They took me out and introduced me to Old Grand Dad. I came back feeling no pain. They introduced me to a beautiful Southern reporter. She was a honey. She asked me if I had said this. I said sure—my inhibitions being removed. I said, "As a matter of fact, I think the best way to go through life is with a high ball in one hand and a cigar in the other." That made the front page of the Memphis newspaper. The next week it also made "Time", "Newsweek", and "The New Yorker", and made my wife mad. I even got a letter from a friend of mine in the British Navy, from Hongkong, enclosing a clipping quoting me in the Hongkong papers. It sort of got around.

I am absolutely sure that alcohol helps patients with coronary insufficiency. I don't mean that you have to keep plastered all the time, but I do think that two or three drinks

LIBRARY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

during the day helps these people. I have been around this country a good deal talking before medical societies, and whenever they have a discussion afterwards, almost always some doctor gets up and says that he had a coronary occlusion three or four years ago and that he wouldn't be able to carry on his practice unless he got away with about a pint a day.

Relevant to nothing, I want to close this with a story I heard a few days ago that amused me, about the drunk. Every time he came home his wife hit him over the head with a baseball bat, pushed him under the sofa, and let the servant sweep him out next morning. Her friends told her that was no way to treat a drunk, that she ought to be kind to him. That shamed him and he would not get drunk so often. That night when he staggered through the door with his arm waiting for the baseball bat, she said, "Come on in dear; let me help you with your hat and coat." She took his hat and coat and said "Come on upstairs." He staggered upstairs, still holding his hand up. She got him undressed and said, "Come on dear, get into bed." He stood there and looked at her and said, "Well, I guess I might as well, I'm going to get hell when I get home anyhow."

DISCUSSION

DR. E. R. MILLER (Wilmington): I don't know if Dr. Stroud would like me to discuss his paper or his stories. I do know that standing up here in this Sunday school room reminds me of one. A man was called upon to pray in the Sunday school, and he prayed long and long, and didn't stop. After a while he stopped, and his little son, after the Sunday school was over, said: "Father, you certainly did pray a long time this morning. I didn't know when you were going to stop. It embarrassed me." He said, "Son, for the sake of life I couldn't think of that word 'Amen'."

Coronary sclerosis and coronary artery disease I am sure is a subject that is close to the hearts of all of us, because it is no respecter of persons excepting that the men naturally are struck harder than the women. As a matter of fact, it is supposed to be called the physician's disease. That is questionable, of course, but we do know that among our own fold it is a high cause of mortality and morbidity.

The question comes up, what more can be done about it? We don't know the cause, as Dr. Stroud said, except perhaps as Dr. Tarumianz inferred that we are living in a period of strain and stress.

I was just reading last night of some observations of Dr. Snapper, who for years practiced in China and was quite a research man, doing many autopsies on the Chinese. He found that coronary sclerosis was a very, very rare disease, that the Chinese seldom die of coronary sclerosis or coronary thrombosis. This of course raises the question as to the relation of diet. We know that the Chinese are not only rice eaters, following a high carbohydrate diet, but also that they have a different attitude toward life, more philosophical than we have.

We do know that coronary artery disease strikes very hard in the younger group, that at the age of forty to fifty sudden death seems to be more prominent than in the older group. Research has shown that the cholesterol seems to rise more rapidly between the ages of 40 and 50 or 55, and after that age it seems to level off.

The cholesterol test is a very simple test and in our office practice, after all the hypertensions and infarcts, we have taken routinely blood cholesterols and we have put them on the usual diet of elimination of fat, and of course as you know that means fat meats, butter, cream, and yolk. Of course, other diets which are more complicated but practical are also used. We have been following these along very carefully with patients and in taking the blood cholesterols I have found that it is of very little avail. Recently however, a startling case of a patient in the hospital with a very high cholesterol of over 400, who was put on a rice diet, came to our attention. The cholesterol did drop very spectacularly. However, when she was put back on the regular diet the cholesterol again rose. So we have the question of the etiology of coronary heart disease, of which we seem to know little.

Therefore, we shall turn to the diagnosis, which has been discussed. It seems to me there again we have a great opportunity to discuss or to diagnose this disease. I think that frequently we feel that if it is a questionable case the patient must be removed to the hospital. I should think there is an opportunity to make more available to physicians the use of the electrocardiogram. Perhaps that has to be through the American Heart Association, or there can be stations in different parts of the cities of the country where a questionable case can be brought. I heard Dr. Herrick, who first destroyed the clinical story of coronary thrombosis back in 1912, give a paper about 25 years later in which he said there are 25 different clinical conditions which may stimulate coronary artery disease. Therefore it is important, as we know, to make the diagnosis when the diagnosis should be made.

It seems to me it is an opportunity that we could make available, as I say, to the practitioners without filling hospitals for diagnostic purposes, and to follow along routinely electrocardiography. Serial cardiography is important.

Not too long ago an employee of the duPont Company down in the South, a supervisor of a construction gang, had some type of attack. Electrocardiogram was taken, which was perfectly normal. A month later he didn't feel right and the duPont physicians felt that he wasn't fit to go back to work. He was sent home on vacation, and on taking his electrocardiogram a month later there were the typical curves of coronary thrombosis.

I think it is a challenge, it is one of our opportunities, to try to diagnose coronary thrombosis more accurately, to make the differential, because as you know, if the diagnosis is overlooked and you think it is acute indigestion, or you think it is a gall bladder attack, which it very easily could be, that one mistake is enough.

The question I would like to ask Dr. Stroud, from the practical point of view, is the treatment with reference to the age of people. I get the impression that it is permissible and worthwhile in the elderly people with coronary thrombosis and mild cardial infarction not to keep them in bed quite so much as the younger person. We remember the days when we would just have them move their fingers and keep them in bed six weeks. But among these older people in the age group of 70 to 80, I wonder sometimes whether we should put them in bed at all.

As an example of that, a week ago a patient 70 years old came into my office suffering from coronary thrombosis. She didn't want to go to the hospital because it was too disturbing to her. I let her go home because of that fact. I took several cardiograms. The next one showed the typical pattern curve. The patient was allowed to get up, walk to her meals, and walk about, but mainly bed rest.

It seems to me that too many times we are over-cautious, particularly in elderly people, forgetting the other complications that arise when old people are put to bed rest. I would like to hear Dr. Stroud discuss that.

I wanted to ask him a lot of questions too, and I hope he does forget the word "Amen." The question was, in his experience are attacks presented more in the night than in the day? Dr. Master brought out a paper where he felt that attacks occurred as frequently at night as they did in the day, where it has been our general impression that more attacks occurred during the day.

Then of course, he did not touch at all upon the question of dicumarol in the treatment. I know the time has been too short. The reason I brought this out is that I was in a conference the other week and somebody said that Dr. Stroud doesn't use dicumarol. So I wanted to mention that, and I wish Dr. Vander Veer would bring out the pros and cons. I know that the subject is still open to debate.

Finally, I wanted to bring up the question of whole leaf digitalis, which I didn't intend to, but my confrere sitting next to me said I wish you would take him to bat on that. We do know there are schools both ways, but it is the general impression of most of us that we like to use the glucosides. We feel that they are less nauseating, that many cases can be more quickly digitalized, although I grant that for lang range digitalization and for daily ration of digitalis, probably the whole leaf may be better. But I would like to hear Dr. Stroud discuss that.

Dr. Stroud, in closing, I may say, is the usual entertaining speaker who not only brings forth his message with a lot of truth but with a lot of good common, sound sense which I think we still need much of. He talks not from the books which you have read but from practical experience, and with it he always offers us good entertainment.

Dr. Stroud: Thanks very much, Dr. Miller. I agree with you that the older patients probably ought to be gotten out of bed sooner than the younger ones because of the possibility of vascular changes in the lower limbs. But I still stick in most cases to the six weeks, because I think it has been pretty well proven that it takes at least that long for an adequate scar to form in the myocardium and for the collateral circulation to be well on its way.

As to the whole leaf, I know from going around the country that all the doctors have been sold on the glucosides. I know Dr. Harry Gold believes in them, and I have great respect for his opinion. But Dr. Sam Bellet said the other day that he has swung back to the whole leaf because he found so many cases of digitalis intoxication at the Philadelphia General Hospital.

I don't think anybody has been able to show whether one-tenth milligram of these things is equivalent to a grain and a half, or two-tenths milligrams. So that you get all bawled up, in my opinion. I will admit, as I said, that if you want to digitalize by mouth within twenty-four hours, or something of that kind, I think in that case the glucoside is much more rapidly absorbed and more completely absorbed. But for general purposes—maybe it's because I'm so conservative or have gotten used to it after 30 years—I stick to the whole leaf.

About dicumarol, I have never advised it in acute myocardial infarction. For involvement of the limbs, yes, or if the patient begins to throw emboli, then I think it is all right. But this business of sending your patient to the hospital and over-burdening the laboratory, having the poor patient stuck every day, not being certain whether the laboratory pro thrombin time is accurate or not, I don't think the results warrant it routinely. So if I am called in consultation and the doctor has been giving him dicumarol, I don't stop him, because if anything happens then I would be holding the bag.

Dr. J. R. Durham (Wilmington): I have enjoyed Dr. Stroud's talk, as always. He has a happy faculty of making you listen as though you had never heard the story before.

As far as alcohol goes, I think we all are aware of the sense of well-being, the peripheral vaso-dilatation, and so on, that we get from the drug, but in a recent study in which coronary insufficiency cases were permitted to exercise and then the typical tracing was taken following exercise, with the S-T changes, and then the patients were given nitroglycerine and permitted to exercise, and the exercise tracing taken, then thirdly the same patients were given alcohol and permitted to exercise, the interesting thing was that the exercise tracings with alcohol were the same as the control. That is, it did not show the disappearance of the S-T changes that the patient had when he took nitroglycerine. But the patient didn't feel pain. So alcohol is a sufficient depressant to the pain centers, perhaps; I don't know.

I would like to ask Dr. Stroud whether he has had experience with khellin. Our own limited experience has been that the drug is limited by the nausea produced in the patient. If they get over one or two tablets a day, they become quite nauseated, sufficient to produce coronary dilatation.

As far as cholesterol diet goes, I think all of us who have had a chance to place a patient on a low cholesterol diet, following them with blood cholesterols every month or so, have been very disappointed in the results even with the use of some of the choline preparations. Perhaps it is the androgenous cholesterol that has its effect there.

Lastly, I would like to ask if Dr. Stroud has any explanation why the anginose patient can do so much more indoors, going upstairs. But the minute he gets outdoors with an overcoat on, perhaps it is just parking the car, he always seems to get his pain.

Dr. C. C. Fooks (Milford): Mr. President, I would like to ask Dr. Stroud whether he uses morphine.

Dr. Stroud: I read that article about the nitroglycerine and the alcohol. I don't think they gave him enough alcohol. I hope Dr. Vander Veer will touch on your second question. He has had much more experience with it than I have. I have only seen one case on it, and I am doubtful whether it has helped him. He has been able to tolerate one tablet a day. As I understood these Egyptians who came to my office and tried to sell me on it, think it is like digitalis in its accumulative effect. But I have heard Dr. Vander Veer talk about it, and I know that they do get gastrointestinal upsets.

As to morphine, I think it is the most valuable drug that we have in the treatment of acute myocardial infarction with pain. Personally, I usually advise a quarter of a grain with 1/150 of atropine, to start off with, and repeat that every fifteen minutes for at least two or three doses, if the pain doesn't clear up. But I also think that if, after an hour or so of using morphine and atropine, you can't relieve the pain, it is wise to use oxygen either by mask at home, or if you can get the patient into a hospital, in a tent, I think very often oxygen will help his pain if morphine won't clear it up.

Aminophylline alone, I don't advise that.

Dr. Fooks: How about morphine intravenously?

Dr. Stroud: I would never advocate it. I think you can get your result by giving it the ordinary way.

Dr. Fooks: You didn't touch on any other thing but nitroglycerine, did you?

Dr. Stroud: Oh yes, I have used papaverine and xanthines. My favorite is the Parker Company "Purobarb". I don't think it upsets the intestinal tract.

Dr. Fooks: How about the longer lasting nitrates?

Dr. Stroud: I don't think they are of any use.

1011 Clinton St., Phila., Pa.

Salvation Army Founder's Day

William Booth, founder of the Salvation Army, was born April 10, 1829 and died August 20, 1912. The Salvation Army program is a Red Feather service in many American communities.

ANTICOAGULANT THERAPY IN ACUTE MYOCARDID INFARCTION, VENOUS THROMBOSIS AND PULMONARY EMBOLISM*

Joseph B. VanderVeer, M. D.**
Philadelphia, Pa.

There have been many important advances in therapeutic measures during the past decade. Certainly one of the important ones is the introduction of anticoagulant therapy for a number of medical and surgical conditions.

As you all know, there are two drugs presently available, although it would appear that in the near future there will be other even more valuable drugs. The present two are heparin and dicumarol. Both of these are effective. They prevent clotting if used in the proper dosage. They do not dissolve clots that are already formed. They are effective separately and they can be utilized together.

Both of these drugs require careful clinical and laboratory observation and control. The mode of action of the two drugs is quite different. Heparin is a physiologic substance which has been known since 1916. There are a few contra-indications to its use. It acts quickly. This drug breaks the clotting cycle in three different places so it is very effective. It is a non-toxic substance, and in general has many advantages as an anticoagulant. Some disadvantages are, however, its expense and the fact it can only be given parenterally. Its duration of action is short which may be an advantage or disadvantage. Its action can be stopped rather quickly, however, if overdosage occurs.

Dicumarol, on the other hand, acts when given by mouth and is inexpensive. It has now been synthesized. It acts by producing prothrombin deficiency. It has certain disadvantages. It is slow in action, rather hard to control, and it is hard to stop its action if an overdosage results. The prothrombin test, which is used for its control, is a rather difficult and expensive one, and a daily test is essential for proper regulation in most instances.

There are several contra-indications to the use of anticoagulants: blood dyscrasias, open wounds, and ulcerative lesions of the genitourinary, gastro intestinal or respiratory tracts. They are not used in subacute bacterial endocarditis because of bad end results, or after operations on the central nervous system, where complete lack of bleeding is so important. Dicumarol is contra-indicated in patients with severe renal or hepatic damage. In patients with malnutrition and vitamin deficiency the action of the drug is often controlled with difficulty. I might mention there are now several new synthetic drugs available for clinical research study which show considerable promise. One of these, Paritol, has a heparin-like action. It is much more prolonged in action and should be much less expensive. Another dicumarol-like drug is Tromexan.

---

*Read before the Medical Society of Delaware, Dover, October 3, 1950.

**Head of Cardiovascular Department, Pennsylvania Hospital.

Under what clinical conditions can one utilize these drugs? Venous thrombosis is probably the most important. Under this heading we include both thrombophlebitis and phlebothrombosis. They tend to prevent further extension of the clot, reduce spasm in the vessel. The clot becomes fixed to in the vein rather quickly, and this is followed in most cases by organization and canalization of the clot with a relatively good end result.

In this type of illness, the treatment of choice is heparin, usually intravenously, followed by dicumarol, given by mouth. They can both be started on the same day. After two or three days of heparin the dicumarol alone is usually adequate. In phlebitis or phlebothrombosis the therapy should be continued for ten to fourteen days, or longer. It is desirable to keep up the treatment until the patient is ambulatory.

Pulmonary embolism is a very important field of therapy. As you know, pulmonary embolism is relatively frequent in post-operative patients, especially gynecologic, orthopedic and obstetrical patients. Early ambulation has not eliminated thrombophlebitis or phlebothrombosis. It may have many advantages but it isn't the answer to this problem. With large emboli, emergency treatment is important. I want to discuss especially small pulmonary emboli, which are frequently overlooked or misdiagnosed.

There are two conditions which are suggestive of small pulmonary emboli, (usually with pulmonary infarction). The first is blood spitting in a patient who has been recently operated upon or who is in bed. Unexplained, mucoid, dark, bloody sputum is usually from an infarct. The other one is an acute pleurisy. This comes rather gradually in many patients. Its development may take several hours or a day or two. When either of these occurs in a patient post-operatively, one should think of pulmonary embolism. It is extremely important to be as sure as one can of the diagnosis of small pulmonary embolism. It calls for anticoagulant therapy using heparin and dicumarol. I think I can show you what happens to these patients if anticoagulant therapy is not used.

In the treatment of myocardial infarction, as Dr. Stroud mentioned, there is perhaps some difference of opinion, however, I think there is a great deal of evidence that anti-coagulant therapy lowers the mortality and the morbidity and prevents complications in acute myocardial infarction due to coronary thrombosis. There is no question it is of even greater value in the older individuals and in those with some cardiac failure. I am convinced it is a valuable therapy and favor using it wherever possible. This type of treatment is not easy to use at home because the backbone of the therapy is dicumarol. Heparin is seldom indicated in these patients. One should be sure of the diagnosis or myocardial infarction before starting anticoagulant therapy. At the onset a perforating ulcer or a dissecting aneurysm may simulate myocardial infarction. I have seen both of these conditions treated with heparin, in error, and needless to say with poor results.

If the diagnosis of myocardial infarction is in doubt it is better to defer anticoagulant therapy for a few days.

I agree with what has been said about bed rest. We advocate five to six weeks of complete rest in the average patient. When one does that to an older individual you immediately ask for trouble in the form of phlebothrombosis of the lower extremities. However, we believe complete bed rest is exceedingly important in healing the infarct and preventing its extension. For that reason anticoagulant is very much indicated in these older individuals, and we do not subscribe to treating them by semi-ambulatory methods.

Finally, prophylactic therapy is coming into use for selected individuals who are especially susceptible to phlebothrombosis: Certain post-operative patients, obstetrical patients, gynecologic surgery, orthopedic surgery, fractures of the hip, and patients who are to be in bed for weeks. These patients have a high incidence of pulmonary emboli, and such complications are practically eliminated by adequate anticoagulant therapy.

A number of patients with peripheral emboli from auricular fibrillation have been treated over a period of months with what appears to be good results. They have been treated on an ambulatary basis for the most part and often can be satisfactorily controlled on one or two prothrombin tests per week.

(First slide) Heparin therapy can be given first, as I mentioned, parenterally. It can be given by continuous intravenous drip, which I think is very seldom indicated. That is the first method that was used, and a lot of bad results were observed because it is hard to control. The intermittent intravenous method has proved to be safer. The dosage schedule of 50 mg. every 4 hours in the intermittent method, is very satisfactory. The clotting time is best determined by the Lee-White method. The clotting time should be checked before second dose and then repeat heparin dosage every four hours. This method is time-consuming and it is practically impossible to do at home. But it certainly is the most valuable and effective method for stopping thrombophlebitis.

(Next slide) Here is a patient with a 10-minute coagulation time, given 50 milligrams of heparin I. V. (Chart) In six hours the clotting time is completely normal, and a second dose was given. The clotting cycle is thus broken every four to six hours with this method, which has been proven to be exceedingly effective. There have been thousands of patients treated in this country and in the Scandinavian countries where this method was utilized even more than in our country.

(Next slide) Dicumarol dosage schedule: An initial daily dosage of 300 milligrams is given until a prothrombin time of 30 seconds is reached. Then doses of around 100 milligrams daily, more or less, are given to keep the prothrombin level between 30 and 35 seconds. In treating these patients by the percentage level we try to keep them around 15 or 20 per cent of normal, in medical patients. No dicumarol is given when the prothrombin time exceeds 35 seconds, or about 15 per cent of normal.

We often write a treatment schedule for the patient about as follows: If the prothrombim time is 15 per cent of normal, give none; 15 to 19%, give 50 milligrams of dicumarol; if 19 to 22%, give 100 mg. and if 23% or over give 150 mg.

(Next slide) Here is a patient who took a good deal of dicumarol, 300 milligrams on four successive days, and 200 mg. on the fifth. This was much more than the average patient. I might say that without daily prothrombin times I don't believe this type of therapy is safe, and it is not apt to be successful.

(Next slide) In the American Heart Association series in which approximately 1,000 patients with coronary thrombosis and myocardial infarction were treeated, the results were quite striking. Other series of lesser extent have been quite similar. About one patient in three was thought to have been saved by anticoagulant therapy. They were saved not because of the failure to prevent sudden death or cardiac failure in the first few days but because embolic complications were prevented.

(Next slide) This shows the location and type of thrombo-embolic complications in the control and treated groups. In all instances, the control or untreated group is a great deal higher.

(Next slide) Finally, death rates by age groups. One sees a difference in all control groups, but especially the ages 60 to 69 and 70 and over. This is a group of 1,000 patients, which certainly means something statistically. Ten thousand patients would be more valuable.

(Next slide) This slide is from a table by Zilliacus, from a monograph written in 1945. As I mentioned, the Scandinavians were considerably ahead of us in the treatment of venous thrombosis with heparin. This includes patients with no treatment and patients with specific treatment, which was heparin or heparin and dicumarol. Out of 214 patients who were not treated with anticoagulants fifty-nine had pulmonary embolism and 20 died. In the 576 treated cases, 8 had pulmonary embolism and 3 died. Those figures are very striking. At the time we became aware of this article, we were treating only myocardial infarction patients, but we immediately became interested in what seemed to be a most effective therapy for venous thrombosis of all types.

(Next slide) Even more striking is the analysis of pulmonary embolism as the primary symptom. Thrombophlebitis was probably present but was unrecognized. In 282 patients with pulmonary embolism as the first symptom there were 114 immediate deaths, which is about what we would have in most of our hospitals. When you take the patient who suddenly gets a pulmonary embolism from an unrecognized focus the result is usually bad. Survivors with no treatment, 65. Of 65 patients who survived the immediate shock of the thing and lived a few hours or a few days, but in whom nothing was done, 21 died, or 32 per cent. There were 103 cases who survived the initial shock and anticoagulant treatment was started. Heparin was used in 71 cases; heparin and dicumarol in 16, and dicumarol alone in 16. There were no fatalities. In other words, 103 patients who had pulmonary emboli, but were treated had no deaths; but in 65 patients in whom anticoagulant therapy was not used, 21 of them died.

Thus one immediately becomes conscious of the fact we have something very important in treating patients with pulmonary emboli who survive the initial attack. That is why we must stress, don't miss the small pulmonary embolus. It is apt to be followed in a few days by a larger embolus, and often a fatal one.

(Next slide) In analyzing the records of 282 patients whom we have treated over the past three or four years there are 159 treated by heparin and dicumarol. These are patients with thrombophlebitis with and without pulmonary embolism. Surgical therapy, which included ligation with or without sympathetic block or sympathectomy includes 71 cases; untreated patients 52. In 18 of this latter group we missed the diagnosis of venous thrombosis. What happened to these patients? The next slide shows the results.

In the 154 with anticoagulants, 101 had only thrombophlebitis and 53 were complicated by pulmonary emboli. However, only 4 patients had emboli after therapy. There were two deaths. Both of these had pulmonary emboli before therapy was begun.

We break this down in one final table where we take out the patients who died suddenly. In other words, if you are going to treat the patient, he has to live a while. Mortality rates of pulmonary embolism with all types of therapy, but excluding patients with sudden death and those patients who died within the first few hours: anticoagulant therapy, 57 cases of pulmonary embolism, 2 deaths; surgical therapy, 16 cases, 4 deaths; both therapies, 3, with no deaths; untreated, 17 patients, 8 deaths. In other words, these last 17 patients had a pulmonary embolus but they survived. Eight of them died later when nothing was done whereas, out of 57 similar patients there were only two deaths when anticoagulant therapy was used.

In summary, I believe nearly everyone agrees as to the value of anticoagulant therapy for several conditions. *In venous thrombosis and pulmonary embolism* it is usually the treatment of choice. In pulmonary embolism it is exceedingly important that the diagnosis be made with large emboli but even more important not to miss the small pulmonary emboli, often manifested by blood spitting or by pleurisy, and it may be desirable to start anticoagulant therapy if it is probable that pulmonary embolism has occurred. In *Coronary thrombosis* the lower death rate and reduction of complications justify the therapy, if at all possible. In the past 3 years I have seen several patients with acute myocardial infarction who developed venous thrombosis and pulmonary emboli while being treated without anticoagulant therapy. During this same period in approximately 250 patients with myocardial infarction treated by anticoagulants we have had no frank thrombophlebitis fatal pulmonary emboli or deaths from hemorrhagic complications. Prophylaxis is a new field for this therapy. In patients who have had previous thrombophlebitis, in surgical and obstetrical patients who are especially susceptible to thromboses, and in patients where prolonged bed rest is indicated, this type of therapy may save many lives.

Our need for the future is a test which will determine which patients have a thrombotic tendency. There are many people working on this problem at the present time, and when we have that, plus new drugs which are not only more effective but are easier to control, a great deal will have been done to bring this type of therapy to all patients who have need of it.

330 S. 9th St., Phila., Pa.

Discussion

Dr. R. A. Mino (Wilmington): It has been a pleasure to hear Dr. VanderVeer. He gives us a greater appreciation of the importance of thrombophlebitis, phlebothrombosis and pulmonary embolism. Barnes estimates that 34,000 die each year from pulmonary embolism. It has been found that usually one person out of every 940 admitted to a hospital, and one out of every about 911 dies of massive pulmonary embolism. Contrary to the usual prevalent opinion, it is just as common in patients afflicted with medical diseases as in operative cases.

Being a surgeon, I am in no position to offer a valid opinion on the use of anti-coagulants in the treatment of acute myocardial infarction. From my limited knowledge, I am sure these are very beneficial, and I assume that Dr. Claggett will have something to say in this regard.

A greater appreciation of the importance of thrombo-embolic disease in contributing to the annual death rate is apparent from quoted statistics. Barnes[1] estimates that 34,000 persons die each year in the U. S. from pulmonary embolism. If such is the case, it ranks second to CA. of the stomach as the contributing cause of deaths in the U. S. from disease. Unfortunately, many of these deaths occur in individuals who would otherwise have a prospect of continued healthy existence. Currently accepted statistics show that one person out of every 940 admitted to the hospital, and one out of every 911 operative cases, die from pulmonary embolism.[2] Although the number of persons dying from pulmonary embolism is greater with advanced age, it is remarkable to note that about 1/3 of all fatal pulmonary emboli occur below the age of 40 years. In routine autopsy examination, approximately 2% of the patients are found to have died from massive pulmonary embolism. Contrary to the usually prevalent opinion, death from pulmonary embolism is almost as common in patients admitted to medical services as it is in those following operative procedures. Therefore, the subject of thrombo-embolic disease is significant to every practicing physician.

In order to arrive at a better understanding of the problems connected with thrombo-embolic diseases, Oschner and DeBakey[3] have divided venous thrombosis into phlebo-thrombosis and thrombo-phlebitis. There is usually little difficulty in recognizing the typical thrombo-phlebitis, characterized by swelling, pain, fever and pale extremity. However, at times, it is much more difficult to recognize the much more common phlebo-thrombosis, which at times produces absolutely no clinical signs whatsoever, and may be first manifested by massive pulmonary, and many times fatal, embolism. The usual signs of phlebo-thrombosis, consisting of a very mild tenderness in the calf, or the presence of Homan's sign, and possibly a slight swelling and prominence of the superficial veins, may be present, as may also be the very slight rise in temperature, and slight elevation of pulse and respiratory rate. Undoubtedly, many cases of phlebo-thrombosis are never diagnosed as such, and the patient is fortunate enough to complete the course of his illness without further manifestations of thrombo-embolic disease. I wish to emphasize that the process of phlebo-thrombosis is of very common occurrence, and should be looked for diligently each day by examination of the extremities and careful examination of the temperature, pulse and respiratory rate. If any physical findings appear in an extremity which was previously negative, or if there is slight elevation of temperature, pulse or respiratory rate, a diagnosis of bland venous thrombosis should always be made, and appropriate therapy immediately instituted. In support of the common occurrence of venous thrombosis, Greenstein[4] in one hundred routine postmortem examinations, with examination of the extremities, detected phlebothrombosis characterized by thrombi in the vessels of the calf and feet, in fifty-one percent of the cases, and phlebitis in only 4% of the cases. It will be noted that thrombi were found in both legs in all cases. Similar results were obtained by Hunter, Krygier, Kennedy and Sneeden in 351 routine postmortem examinations. In no instance were there thrombi found in the femoral vein, which were not also concomitantly present in the deep veins of the calf and foot.

It is now generally accepted that the majority of the thrombi which produce fatal embolism arise in the lower extremities, and more commonly the process is a bland phlebothrombosis. It is also well known, that approximately 30% of the patients who have suffered a pulmonary embolus, will suffer a second episode, and that approximately 20% of these will terminate fatally.[6]

In general, two types of therapy are now available in both the prevention and treatment of venous thrombosis and pulmonary embolism. On consists of the use of anticoagulants combining both Heparin and Dicumarol. The other method consists of an interruption of the venous system of the leg. At times, a combination of both methods is employed. There is no doubt that anti-coagulant therapy has reduced the incidence of venous thrombosis and pulmonary embolism. However, it becomes a matter of debate, whether the dangers associated with anti-coagulant therapy offset the advantages of its use. Allen, Barker and Hines,[7] from the Mayo Clinic, report the use of anti-coagulants in 2307 cases. Hemorrhagic complications occurred in 8.5%, and 3.5% were severe enough to require large transfusions. In addition, they reported five fatal hemorrhages associated with the use of Dicumarol. Duff and Shull[8] collected reports of 23 deaths from hemorrhage following the use of Dicumarol. Lilley and Lee[9] reported five additional deaths following the use of anti-coagulants. How many other additional deaths have occurred following the use of these agents is unknown, since all fatalities have not been recorded in the literature. The use of anti-coagulants is again limited by the fact that Dicumarol is usually ineffective until about 48 hrs. after administration. In the meantime, Heparin, which requires careful and tedious supervision, must be administered until the effect of the Dicumarol becomes present. The accurate determination of prothrombin estimation also carries certain limitations. Failure to recognize them may prevent accurate diagnosis, and thus failure of institution of controlled accurate therapy. Dicumarol also has an unpredictable response in many individuals. At times, several days of therapy are required before effective prothrombin levels are established, and at other times it is difficult to raise low prothrombin levels in the event that hemorrhage ensues. There is also the obvious disadvantage that supervision of a control nature requires considerable personnel and an accurate laboratory. These requirements are expensive, and even more important, is the fact that fatal pulmonary embolism has occurred during its administration.

Clinical signs of venous thrombosis have also occurred in the extremities during the course of anti-coagulant therapy. There is also one question which remains unanswered, and that is—how long should anti-coagulant therapy be administered? Embolism has been reported to occur weeks and even a month after continuous anti-coagulant therapy.[9] There are also many situations in which it is inadvisable or contra-indicated to use anti-coagulants, particularly Dicumarol. Certainly its use is contra-indicated in severe liver damage, operative procedures on the brain and spinal cord, blood dyscrasies and bleeding tendencies, pregnancy near term, and patients in whom a second operative procedure is contemplated soon after the initial one. There is no doubt, that with intelligent use of these agents, and close supervision by competent personnel, and the presence of an accurate laboratory, these agents are very valuable in the prophylaxis and treatment of thrombo-embolic diseases.

The other method of prophylaxis and treatment of thrombo-embolic diseases has been by interruption of the venous system of the extremities. Allen [10,11] of the Mass. General Hospital has reported from their experience on nearly 3000 cases. These patients were distributed both in medical and surgical wards, and private pavilions. 1332 patients were treated by interruption of the superficial femoral veins, as both a prophylactic procedure, and a therapeutic procedure, once venous thrombosis was evident. In this group, 6 patients succumbed to further emboli. A few were subjected to inferior vena cava ligation, if emboli continued, following ligation of the superficial femoral veins. Based on a previous analysis of patients with thrombosis of the leg veins, approximately 80 deaths would have been expected in this group of 1332 patients, contrasted with the actual incidence of 6 patients who did succumb following venous interruption. None of the patients subjected to femoral vein interruption lost his life or his leg as a result of the procedure, and in no patient were significant complications or sequellae present following venous interruption. It may be significant to note that a comparison was made with their control series of cases. For instance, following hip fracture, out of 110 cases, 55 treated by venous interruptions was followed by no fatality; whereas, 11 patients out of 55 with hip fractures died of fatal pulmonary embolism. Comparable results were reported with other diseases and surgical procedures, there being marked reduction in deaths from pulmonary embolism following venous interruption, as compared with the control series.

Due to the obvious disadvantages of anti-coagulant therapy, I personally have preferred to employ both prophylactic and therapeutic interruption of the superficial femoral veins in the prophylaxis and treatment of venous thrombosis and pulmonary embolism. I have consistently used this procedure in patients subjected to extensive operations, and in the older age group, and in the past five years have had no deaths from pulmonary embolism, except in one patient in which it was well realized that thrombosis and embolism could occur, but in which it was felt unwise to administer anti-coagulant therapy, and also unwise to ligate the superficial femoral veins. This death was in a 62 yr. old female who had previously been in cardiac failure and corrected by Digitalis, and who was subjected to an extremely formidable operative procedure consisting of extirpation of all the pelvic viscera and lymph nodes, all the perineal viscera with implantation of the ureters into the colon proximal to the colostomy. She tolerated the procedure well. In general, she had an excellent postoperative course, and was in excellent condition. While sitting up in bed on her 16th P.O.D., eating supper, this patient suddenly expired of massive pulmonary embolism, which was proved by postmortem examination. In considering the relatively large number of patients whom I have subjected to very extensive operative procedures, I am sure that my death rate from massive pulmonary embolism would have been considerable, had prophylactic or therapeutic interruption of the superficial venous system not been carried out. In no patient, on whom I have performed interruption of the superficial venous system, has there been any sequellae of significance. There is no patient to date who has any swelling of the ankles, and no significant change from the pre-ligation status. I have carefully followed the principal of routine examination of all extremities daily, and have instituted venous interruption upon appearance of clinical signs of venous thrombosis. In some cases, patients who were subjected to what was thought to be a prophylactic interruption of the superficial venous system, and who had absolutely no signs in the legs, it was surprising to find a bland clot in the femoral vein at the time of ligation. As previously stated, a significant number of cases of bland venous thrombosis produce no symptoms whatsoever, and either subside spontaneously, or are followed by massive pulmonary embolism. I feel, as others do, that interruption of the superficial femoral vein is the therapy of choice in any patient who has already had a non-fatal pulmonary embolus. If emboli continue to occur following superficial femoral vein ligation, these cases can be controlled by ligation of the inferior vena cava, and in the majority of reported cases, this has not been followed by significant complications or sequellae. Certainly a ligation of the inferior vena cava is the treatment of choice in septic infarcts resulting from suppurative pelvic thrombo-phlebitis, and the ovarian vein should also be ligated, along with the inferior vena cava.

Many factors have been stressed and utilized in the prevention of venous thrombosis, such as compression bandages to the legs, elastic compression to the legs on the operating table with intermittent compression to empty the deep venous system, a regular exercise of the legs postoperatively, and early ambulation, all of which have contributed materially in reducing the number of venous thrombosis and pulmonary emboli. It is hoped that an agent will be found which will have all the advantages of anti-coagulant therapy and none of the disadvantages. Until that time occurs, we shall have to continue using anti-coagulants and venous interruption as a method of prophylaxis and treatment of venous thrombosis and pulmonary embolism.

REFERENCES

1. Barnes, Archie: The Problem of Pulmonary Embolism, West. J. Surg., 50:551, 1942.
2. Crutcher, Richard R., Daniel, Rollin A., Jr.,: Pulmonary Embolism, Surg. 23:47.62, Jan. 1948.
3. Ochsner, A. and DeBakey, M.: Therapeutic Considerations of Thrombophlebitis and Phlebothrombosis, New Eng. J. Med., 225:207.227, 1941.
4. Greenstein, J.: Thrombosis and Pulmonary Embolism, So. Afric. Med. J. 10:350.377, 1945.
5. Hunter, W. C., Krygier, J. J., Kennedy, J. C., and Sneeden, V. D.: Etiology and Prevention of Thrombosis of the Deep Leg Veins, A Study of 400 Cases, Surg 17:178-190, 1945.
6. McCarthy, Harry H., McGuire, Louis D., Johnson, Arthur C., and Gatewood, John W.: A New Method of Preventing the Fatal Embolus, Surg. 25:891-896, June 1949.
7. Allen, E. V., Hines, E. H., Kvale, W. F., and Barker, N. W.: The Use of Dicumarol as an Anticoagulant: Experience in 2307 Cases, Ann. Int. Med. 27:371, 1942.
8. Duff, I. F., and Shull, W. H.: Fatal Hemorrhage in Dicumarol Poisoning, J. A. M. A. 193:762, 1949.
9. Lilly, George D. Lee, Robert M.: Complications of Anticoagulant Therapy, Surg. 26: 957, Dec. 1949.
10. Allen, Arthur W.: Interruption of the Deep Veins of the Lower Extremities in the Prevention and Treatment of Thrombosis and Embolism, S. G. & O., 84: 519-527, 1947.
11. Allen, Arthur W.: The Present Evaluation of the Prophylaxis and Treatment of Venous Thrombosis and Pulmonary Embolism, Surg. 26: 1-7, (July) 1949.

DISCUSSION

Dr. H. A. Clagett (Wilmington): Occasionally when visiting a strange clinic we will run across a physician who does not believe anticoagulant therapy is indicated in the routine treatment of myocardial infarction. I recently returned from Boston where I met such a physician, whose argument was, the death rate before all of the anticoagulant drugs was no higher than the death rate after you used all of these drugs, with the concomitant extensive and expensive laboratory work.

I came home and went through the files, and I could not find a single article, a single collection of statistics, to back up the fact that the mortality rate from myocardial infarction was less or the same before and after the advent of the anticoagulants. On the other hand, I found many articles, the most prominent one, of course, is the report of the Anticoagulant Committee of the American Heart Association, and these all agree 100% that the complications are reduced and that the mortality from uncomplicated myocardial infarction has been reduced by the proper administration of the anticoagulant drugs.

Dr. VanderVeer, with his usual modesty, said that it was his personal opinion. What Dr. VanderVeer did not tell you was that he was selected early in this study in 1946, by the Committee on Anticoagulants of the American Heart Association, as one of sixteen prominent cardiologists and prominent clinicians, to test the use of the anticoagulants in his clinic at the Pennsylvania Hospital. When Dr. VanderVeer refers to this report he is referring to work in which he has actively participated, and we were indeed fortunate in having someone here this afternoon who could speak with such authority.

I have just one more idea, which is not entirely my subject. It sort of borders between the surgical and the medical, and that is the idea of thrombophlebitis—or, speaking strictly, phlebothrombosis. I firmly believe—I have no statistics to back up this belief—that we must look at phlebothrombosis in two separate and distinct manners: the prevention and treatment. Once a person has had a pulmonary embolus, you can't prevent the phlebothrombosis. It already is there somewhere in the body, usually in the veins of the lower extremities. In patients that have the type that have been mentioned, that are lying around in bed, who are in a recumbent position for a long period of time and are apt to develop phlebothrombosis, the anticoagulants most certainly should be used prophylactically, as a prophylactic measure to prevent formation of phlebothrombosis.

I don't believe it was mentioned, but unusual elevation of temperature, and pain in the calf muscle upon dorsoflexion of the foot, are signs indicating that the patient has phlebothrombosis, and you no longer can prevent it. I certainly agree that the patient should receive anticoagulant therapy at that time unless there is some frank contra-indication. But I also think that the patient should have the superficial femoral veins ligated. I used to tease my father for wearing suspenders and a belt, but if I am ever a victim of some long-standing disease, where I am forced to lie on my back and have all that blood pull down in the pelvic veins and the veins of the lower extremities, please give me the suspenders and the belt. I want the anticoagulants and I want to be ligated.

DR. A. M. GEHRET (Wilmington): I would like to ask if Dr. VanderVeer has had experience with alphatocopherol?

MEMBER: I would like to ask Dr. VanderVeer if there is any credence to be given to the assertion that dicumarol, or the anticoagulants, act as vaso-dilatators?

DR. VANDERVEER: I wish to thank Dr. Mino and Dr. Clagett for their discussion and the helpful points which they have brought out.

Dr. Mino, as you know, is a surgeon. He certainly is entitled to his side of the story. I think in Philadelphia we have gone a long way to convince the surgeons of the value of this type of therapy during the past three or four years. I don't say that all patients should be treated this way and no ligations done, however. I think the patient who is going to remain in bed after a ligation will not do very well by ligation alone. I think the patients that do well with ligations and there are many of them that do, are patients who have been surgical patients and who are going to be ambulatory very quickly after the ligation is done, often the same day or next day. They get up and about and carry on, thus improving their circulation. I think this makes a great deal of difference.

For example, if you do prophylactic ligations in patients with fractured hips, who remain in bed several weeks because of the type of fracture, you will find that the pulmonary emboli and the deaths in those patients are as high, or even higher in some statistics, than the patients where nothing is done.

On the other hand, treatment with anticoagulants, I believe, will practically eliminate this complication.

As to prophylactic ligation in chronically ill patients such as those with carcinoma, where they remain inactive in bed, I believe the results pretty well show this is not effective as compared to anticoagulant therapy. I think that is why it works in myocardial infarction; the patients are kept quiet and tend to get thrombotic tendencies because of slow circulation. This type of therapy helps greatly in preventing those complications and subsequent deaths from emboli.

We have occasionally ligated an inferior vena cava. I may have misunderstood Dr. Mino, but I understood him to say that venous ligation was the treatment of choice in a patient with a small pulmonary embolus, with recovery. I would take strong issue with this, feeling that a patient with a small or even a possible pulmonary embolism should be treated by anticoagulants. In most of those cases it is very difficult to tell where the embolus came from. I believe the answer is that anticoagulant therapy in these patients stops all thromboses, whether they are in the lower extremities, in the pelvis or elsewhere. Very often, in these patients you don't know where the embolus came from.

Dr. Clagett stresses phlebothrombosis and its symptoms, which we didn't go into. Certainly once those things occur anticoagulant therapy is desirable. There was a question raised as to whether or not the patient had a phlebothrombosis. Clinically it was suspicious, but it was borderline. The suggestion was made to do a venogram and if it were positive to do a vein ligation. The venogram was negative. The next day the patient died with a fatal pulmonary embolism. This illustrates the difficulty one may encounter in the diagnosis of even a large phlebothrombosis. For this reason anticoagulant therapy, in the uncertain cases seems the more rational procedure.

The question was raised how long should anticoagulant therapy be carried out? In myocardial infarctions we carry them out four to six weeks, depending on when the patient becomes ambulatory. If the patient is severely ill and has a big infarct with heart failure, we have often carried it on for ten or twelve weeks or until the patient was able to be ambulatory. In ambulatory patients with auricular fibrillation dicumarol therapy has been carried on in many patients for over a year.

COL F OF PHYS

In phlebothrombosis, usually therapy is carried on for ten days to two weeks. If the patient has improved, he is allowed up in a very few days. We don't keep them in bed for weeks, as we used to. With treatment the spasm stops, pain is less, and the patient can be ambulatory within a few days. The results are usually excellent.

In the pulmonary embolism, depending on how long the patient has to be in bed we carry on the therapy started with heparin and followed by dicumarol, for two or three weeks, or more.

I don't have any personal experience with Alphatacopherol. It sounds intriguing. However, some of the authorities on blood clotting say that it is unsound and is not effective.

In regard to dicumarol as a vaso-dilator, I don't know, but I don't believe it is effective in lowering mortality and in improving the outlook in myocardial infarction as a result of vaso-dilatation. I believe it is the prevention of thrombi from the heart going off into the circulation, or in preventing thrombi from the pelvis and lower extremities reaching the lungs and causing fatal pulmonary emboli that has been the greatest contribution in the treatment of myocardial infarction. I think it is most effecive in the older age group and in those who have some cardiac failure.

REHABILITATION FOLLOWING ACUTE MYOCARDIAL INFARCTION*

William G. Leaman, Jr., M. D.**
Philadelphia, Pa.

When the final story of cardiovascular disease of this century is written, I predict that the historians will state that the greatest progress took place in what they will probably refer to as "the blessed forties." During this time we learned a great deal regarding coronary artery disease. My assignment this afternoon is to cover the changing concepts in the management of the patient following acute myocardial infarction.

We encounter all too often patients who die at the time of their first attack of myocardial infarction. Some may never have had a cardiac symptom prior to sudden death. However, those who survive their first attack make up a much larger percentage (between 80 and 85 per cent). Here a carefully planned program of rehabilitation will contribute to a longer lifespan; indeed, some, if properly regulated, may live to a ripe old age.

This objective is clearly in the hands of the general practitioner. The physician's responsibility does not end when the acute illness is over and the patient is symptom-free; it ends only when the patient is trained to live and to work with his lesion to the point of full economic usefulness. To attain this objective, we must kindle more interest in the much neglected subject of rehabilitation. In my opinion, it is risky for the patient to accept full disability from an insurance company after the first attack of myocardial infarction and to sit down to a future of idleness. Instead, interest in a type of work within the patient's tolerance, should be kept up. To make a patient happy for even a short time means that one's efforts have been worthwhile.

Next, let us take up the medical aspects of treatment. While I might touch on some of the newer remedies, I note that these were covered most efficiently for you yesterday. However, I should like to add a thought regarding anticoagulant therapy which is now a much discussed (and at times abused) aspect of convalescent care. Do we have the ideal anticoagulant? Unfortunately, we do not. At the moment our statistics reveal a death rate of 24 per cent when an anticoagulant is not used and a mortality rate of 15 per cent in patients who receive this drug immediately and in controlled amounts. This is not too great a difference. Again, we should not lose sight of the fact that the most serious patients are hospitalized whereas in out-practice one will encounter milder cases. Some patients may not even complain of pain when infarction occurs. Instead an equivalent, such as a sudden episode of unexplained dyspnea or vomiting, may occur and at autopsy the heart shows evidence of a fresh infarction. Again, we may see patients in this category who live well into old age with nothing in their entire history to indicate that chest pain was present at any time and an autopsy will show evi-

---

*Read before the Medical Society of Delaware, Dover, October 4, 1950.

**Professor and Head of the Department of Medicine, Woman's Medical College of Pennsylvania dence of multiple healed infarctions. Consequently, the final decision regarding the value of a routine anticoagulant must wait until we gather more cases. Meanwhile, we should continue our search for better drugs of this type and avoid their routine use in patients who are obviously progressing nicely.

Of what value is quinidine following myocardial infarction? Some physicians advise the use of this drug routinely; others only in the presence of an arrhythmia. I do not believe that quinidine (or any drug) should be used *routinely*. Quinidine may occasionally cause asystole, particularly in the presence of anoxia. Consequently, always treat the patient according to the picture presented at the time rather than follow a routine plan of therapy. After infarction, the clinical picture varies; so should our program of treatment. For example, in the presence of short runs of paroxysmal tachycardia, particularly of the ventricular type, the prompt use of quinidine may be life-saving.

Digitalis should be used whenever the signs of congestive failure can be demonstrated. This drug does not predispose to cardiac rupture nor does it, in my opinion, favor the formation of thrombi by lowering the clotting time. However, failure does slow convalescence. If the myocardial infarction heals, balance may be restored and the cardiac failure may disappear, provided the area of myocardium involved is not too great. The textbooks generally state that if congestive failure follows myocardial infarction, it is a serious omen. While this is true, I have often seen patients survive several attacks attended by all the classic signs of failure and live for some years. In these cases, in addition to proper digitalization, the judicious use of the mercurial diuretics contributes a great deal.

I am sure that you are all aware that the pluck of the patient in the time of crisis cannot be overlooked. I recall an astronomer who was very much interested in this world as well as in the planetary realm he was investigating and wanted to live. Following a rather large infarction his exercise tolerance was considerably reduced. In addition, he was subject to frequent episodes of angina. To meet emergencies, he had oxygen tanks with face masks installed at strategic spots in his home and laboratory. The immediate use of oxygen relieved his anginal seizures and in spite of his poor myocardial reserve, he managed to live for several years.

We must consider the age of the patient in planning a program of rehabilitation following infarction, particularly when deciding on the duration of complete bed rest. I am sure that more latitude here often improves the prognosis. In past years we were dogmatic in treating rheumatic fever, and I am sure you will recall the old expression: "blankets and six weeks." Now we know that the rheumatic state may smolder for a few weeks, a few months, a few years or for a lifetime. So, too, myocardial infarction presents no rule of thumb. We have, I fear, fallen into the habit of considering six weeks as the time all patients should stay in bed following acute myocardial infarctions. This is a poor practice. For example, two weeks of bed rest may be sufficient for older patients who have small lateral infarctions where the advantages of bed rest for this time may outrun the disadvantages. I also believe that the disadvantages of bed rest for a longer period invite serious complications in this group of patients.

When treating older patients we must always consider the possibility of peripheral venous thrombosis as an untoward effect of complete inactivity. Embolism is a complication which defies prediction. Why encourage it? In my experience, it is generally the result of venous thrombi in the lower extremities. A great many of the pulmonary complications that prove terminal come from venous thrombi in the limbs. Inactivity and prolonged bed rest give more thrombi and lessen chances of survival. We should put into practice all the known prophylactic measures to prevent intravascular clotting the *first day* the patient is placed at complete bed rest.

Again, a commode beside the bed is far better than performing an uphill Valsalva experiment with a bed pan. While you may consider this a small item of the post-infarction program, it may, nevertheless, contribute to a better prognosis, particularly in the case of men who, as a group, are vigorously opposed to using a bed pan.

The patient's history, that gives us so much information, is often overlooked. I have followed patients who have had true anginal attacks for as long as 20 years. A good coronary collateral circulation probably accounts for these instances of long survival. It may be produced by a gradual myocardial anoxia. This gift of Nature may prevent a myocardial infarction even though the vessel is completely occluded by a thrombus and may also be the reason some of these patients after many months or years of the anginal syndrome gain a better exercise tolerance and are able to continue as wage earners.

When the patient is permitted to be out of bed following an episode of acute myocardial infarction, the first question he generally asks is: when can I go back to work? If a careful assessment has been made during the healing stage, the answer here should not be too difficult. For example, what kind of work has been carried out in the past? What is the distance to the place of employment? How does the patient get along with his fellow workers? Generally speaking, the absence of anginal pain and dyspnea under circumstances equivalent to those at work is favorable. Unfortunately, the job today is to convince the employer that such a patient can carry out the duties of his former occupation. Industry, fearful of an added risk, does not share our degree of optimism in this matter of rehabilitation. The element of fear (perhaps on both sides) should be overcome by a common-sense approach to the problem.

At this point, you will have to fill the role of psychiatrist for these patients. In the majority, confidence in the future can be restored. The convalescent patient can truthfully be told that a myocardial infarction is quite like a broken arm: it heals. We have ample evidence to prove this. In many instances we can say with confidence that the heart is not handicapped—in fact, the occluded vessel may have been the only coronary artery involved. An explanation of the collateral flow as Nature's way to permit survival also helps morale and encourages further cooperation.

Right here a word regarding the use of nitroglycerine may be pertinent. To prescribe this drug at regular intervals throughout the day, to my way of thinking, does not represent rational therapy. If a test dose shows the absence of untoward side effects, the patient should be instructed to use a triturate of nitroglycerine under the tongue before starting any form of effort which usually precipitates mild substernal discomfort. Used in this manner, the drug may promote collateral circulation and *prevent* the pain. Therefore, we should not overlook this prophylactic use of nitroglycerine.

Recently, Khellin has been used to prevent seizures of angina. With the exception of the nausea this drug produces (in about five per cent of the cases), it is non-toxic. Animal experiments have shown a marked increase in coronary collateral flow following the use of Khellin. However, the final answer regarding this preparation awaits a more extended clinical trial.

Since, with survival, conditions in the coronary circulation change, any drug that we give the patient during convalescence must be reassessed after a short time. Aminophylline belongs in this group. A good rule, I believe is to stop a drug for a trial period every four to six weeks. Aminophylline by mouth, if long continued, is capable of producing gastric disturbances. Again, I do not believe that this drug increases coronary flow as much in the human as it does in the experimental animal. While I have witnessed instances where aminophylline has raised the threshold of pain production, nevertheless, I do not give this drug continuously throughout the period of rehabilitation to *all* patients. Its intravenous use in seriously ill patients may be attended by untoward effects while the use of a rectal suppository, particularly at night, many times is beneficial in selected instances where nocturnal dyspnea presents a problem.

Papaverine has lost ground recently as a useful drug during convalescence from myocardial infarction. The routine prescription containing papaverine hydrochloride and one of the xanthine group does not help the majority of patients. I believe that papaverine is of little, if any, value when given orally in coronary disease. Then, too, we must consider that it is a rather expensive drug if given for long periods of time.

Today misinterpretation of the electrocardiogram by the uninitiated quite often accentuates the patient's fear. If, during the convalescent period, the electrocardiogram does not change from day to day, dyspnea and chest pain are absent and the patient carries out his daily work without any symptoms referable to the heart, I am not concerned regarding the particular pattern presented.

In the course of time, the question regarding the installation of an elevator in the home becomes a matter of concern in some families. These devices, in my opinion, are a colossal waste of money, particularly at a time when we are in need of so much of the material that goes into their making. In addition, if they are used, the patient is apt to gain weight which puts more strain on the heart. In short, going up steps easily and quietly does more good and most of the patients who do not have elevators seem to live longer.

During recent years the cholesterol content of the diet has received a great deal of attention. Perhaps, if we solve the mysteries of cholesterol metabolism, we will come close to unraveling the cause of atherosclerosis. At the moment, however, our knowledge is fragmentary. For example, does the high cholesterol diet predispose to atherosclerosis? Many prominent investigators believe so, but this question must remain unanswered, particularly since it is based on feeding a cholesterol diet to animals unaccustomed to a regimen of this type. There are some patients who display a faulty cholesterol metabolism and this unfortunate state of affairs may be familial. I do not think that the fault will be found to be in the diet iself. Remember that cholesterol can be synthesized in the body. If, in this manner, we produce excessive amounts of cholesterol, the restriction of intakes seems of little avail. Consider, for example, the amount of endogenous cholesterol arising from the breaking down of the patient's own fatty tissue when he is placed on a reduction diet. The restriction of cholesterol intake, according to some studies, does not even alter the serum cholesterol level of patients suffering from xanthomatosis. About the best we can say today is to advise overweight patients who have very high serum cholesterol levels to restrict dietary cholesterol intake.

There can be no doubt that fear and inactivity contribute to weight gain. This increase places a strain on the heart. Consequently, a gradual weight loss in the presence of obesity is helpful, particularly (as stated above) if the blood cholesterol is high. Plain facts regarding obesity should not be withheld if we expect to gain the full cooperation of the well informed patient who is convalescing from a myocardial infarction.

The patients in the post-infarction group who go on fishing trips, take occasional hikes and keep on working at their jobs to the limit of their reserve, as a group, fare better. I have examined at yearly intervals a man who had a posterior myocardial infarction proved by a typical history and a subsequent series of electrocardiograms 19 years ago. Since his initial attack he has had no symptoms, has worked every day and has never needed a psychiatrist. Recall the story that Dr. Paul White tells regarding the coronary patient leaving the hospital after infarction who said, "I will send you a turkey every Thanksgiving day that I live." To date, Dr. White has received 24 turkeys.

Many experiments have shown that alcohol has a dilating effect on the coronary vessels. Consequently, it has a place in the treatment of recurring angina, particularly when nitroglycerine gives an untoward effect such as headache, dizziness or syncope.

The use of tobacco is argued both ways by physicians and the laity. I have observed many cases of men of 70 or so who have coronary disease and who have smoked and smoked and smoked. From what I observe, I feel that smoking does not have too great an effect on coronary flow. I do not believe in tobacco angina. I do believe that the use of tobacco has a deleterious effect on peripheral blood flow. Of course, if the patient takes a cigarette and immediately has a typical anginal seizure, tobacco should be omitted.

The treatment of shoulder-hand syndrome following myocardial infarction is many times very difficult. Diathermy, roentgen treatments and procaine injections have all been recommended. I have only once resorted to a ganglionectomy in a case of this type. Incidentally, violent manipulations by the uninitiated do more harm than good.

Today, our great problem in rehabilitation is with industry. All our efforts are in vain if employment within the limits of the patient's reserve is refused. It can be said that, as a rule, the properly rehabilitated cardiac patient is a safe employee and, given deserved encouragement, actually proves more efficient than many members of control groups. Americans are known abroad as a nation of wasters. If this is so, we cannot today, faced as we are with a national emergency, afford to waste either our human or material resources. The situation would be strengthened if industrialists could be convinced that the majority of patients following myocardial infarction are employable at various levels. In large cities in our country, rehabilitation bureaus are a great help. Here cardiac patients are interviewed; essential facts are given to them by a counselor who cooperates with the family physician. If these bureaus could be expanded by using some of the money collected at the time of the annual heart drive, communities would be quick to learn the value of the local heart associations and would give accordingly.

In the absence of exact knowledge regarding the etiology of coronary artery disease, we can still accomplish a great deal by focusing our attention on the *known* facts which influence rehabilitation. We should endeavor to abolish fear and to encourage the patient after an acute infarction to live within the limits of his disability but to the maximum of his ability. We should treat the cardiac patient following a myocardial infarction by remembering that it is the severity of the disease (for example, the ease of production of anginal pain or dyspnea) which should guide our advice at all times.

In conclusion, I hope I have shown this afternoon that a rational treatment of acute myocardial infarction can lead to the conservation of human life by keeping useful citizens gainfully employed. Remember that each time you obtain a suitable position for a rehabilitated member of this group, you will be rendering an invaluable service to the family, the community and the nation.

3700 Baring St., Phila., Pa.

TRAFFIC SAFETY

Automobile accident deaths and injuries in the nation took a sharp jump last year over 1949, according to figures released recently by The Travelers Insurance Companies.

The report indicates that the 1950 death toll of 35,500 is the greatest since 1941, peak year in highway and street deaths when 40,000 were killed.

The injury total soared to a new all-time high of 1,799,800 in 1950, displacing the previous high of 1,564,000 established in 1949. The 1941 figure was 1,488,000.

These statistics are highlights of "R.I.P.*", seventeenth in the annual series of traffic safety booklets issued by The Travelers. The Hartford insurance firm maintains an accident statistics bureau which collects and analyzes data from the 48 states and the District of Columbia.

Among specific causes of deaths and injuries, excessive speed once again raised its record. "Speed took 13,300 lives last year. Speed caused 475,000 injuries last year. Speed was the dreadful mistake made by one of every three drivers involved in last year's serious accidents", says the booklet.

Although there was only a small increase in the total number of pedestrian fatalities during 1950, there was a sharp increase in the number of persons killed crossing streets between intersections. "Jaywalking" took the lives of 3,740 last year, an increase of 240 over 1949.

Last year, for the second time since the war, the percentage of 18 to 24-year-old drivers involved in fatal accidents took a downward turn. But the booklet points out that while drivers in that age group, "make up well under 20 percent of the total of all drivers, last year (the) group was responsible for more than 24 percent of 1950's fatal accidents."

+ Editorials +

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building

Andrew M Gehret, M.D. .... Associate Editor
1007 Park Place

M. A. Tarumianz, M. D. ....Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 23 June, 1951 No. 6

A.M.A. CONFERENCES

The Conference of Presidents and other officers of State Medical Associations was held in the Hotel Traymore, Atlantic City, on Sunday, June 10th. Some 200 persons attended this Conference and were rewarded by hearing four of the finest papers that it would be possible to hear, as follows:

A Physician Views Medicine, by W. Andrew Bunten, M.D., of Cheyenne, Wyoming; Past President, Wyoming State Medical Society; President-Elect, Conference of Presidents and Other Officers of State Medical Associations.

An Editor Views Medicine, by Edwin F. Abels, of Lawrence, Kansas, Past President, National Editorial Association; Editor, The Lawrence Outlook.

A Clergyman Views Medicine, by Most Reverend John J. Wright, D.D., Ph.D., Roman Catholic Bishop of the Diocese of Worcester, Massachusetts.

A Legislator Views Medicine, by Hon. Richard M. Nixon, of Whittier, California, United States Senator from the State of California.

This Conference was presided over by our old friend, Julian P. Price, M.D., of Florence, South Carolina. *The Journal* will present these four splendid papers just as soon as the Conference releases them for publication.

A second conference, also on June 10th, was held by the Federation of State Medical Boards of the United States, to arrange the program for the next meeting of the Federation, which will be held next February in Chicago. As a member of the Executive Committee of the Federation, we assisted in the drafting of a very worthwhile tentative program, which we hope may become the actual program.

The third conference was held on Monday, June 11th by the Medical Society Executives Conference, which is a comparative new organization of the executives of state and county medical societies throughout the nation, and which now has a membership of 166. Since Delaware's Executive Secretary is only in his fourth year in that position and still has many important things yet to learn, we found this a most interesting and instructive Conference. We brought home with us several ideas which we feel sure will contribute to the efficiency of the work we are doing here at home. This Conference was attended by over a hundred persons.

HAND-OUT DE LUXE

Although responsible officials have "nothing to say," there is no reason to doubt the well-documented report that the Administration will urge Congress to establish a system of free hospitalization for men and women over the age of 65. It sounds like something that Oscar R. Ewing, Federal Security Administrator and a welfare-stater of the first order, would dream up and the President could turn it into a useful weapon in the 1952 election campaign. Buying votes with the people's money is an old Roosevelt-Truman custom.

We are bound to say that politically it is an ingenious scheme. If Congress falls for it—which now seems unbelievable—the President can explain to the 7,000,000 citizens eligible for its benefits that this is what he has done for them. If Congress throws it into the ash can—where it belongs—he can tell them that he did his best but a reactionary Senate and House blocked the way. In either instance he garners votes for himself. It's a case of "heads I win, tails you lose."

No attempt has been made so far to determine what the program would cost—in these Fair Deal days that is a secondary consideration—but it takes no great imagination to see that the burden imposed on the taxpayers would be of staggering proportions. The question also arises whether there are enough hospitals in the country to take care of those who would be entitled to admission. With treatment free hundreds of thousands who now have no difficulty in getting well at home, would rush to hospitals at the first sign of the slightest illness.

Regardless of political consequences Congress should see to it that nothing comes of this proposal for what might easily become a record-breaking governmental hand-out.

—Editorial, *Baltimore Sun*, June 8, 1951

EXECUTIVE DEPARTMENT NEW POWERS

Testifying before the Preparedness Subcommittee of the Senate Armed Services Committee, George F. Lull, M.D., secretary and general manager of the American Medical Association, spoke in opposition to Section 23 of Senate Bill 1.[1] "This section," he said, "authorizes the President to socialize medical care and hospitalization for a large segment of the population by providing for the physical and mental rehabilitation by the Federal government of registrants who are rejected for failure to meet standards for physical and mental fitness prescribed by the Secretary of Defense. This is a request by the Executive Department for vast new powers and Federal expenditures in an area only remotely connected with defense. Here, in the guise of a national defense measure, is a new health proposal that surpasses, in the extent to which it nationalizes medicine, even the compulsory health insurance bills that have been introduced for so many years."

The American Medical Association thoroughly supports the concept that those individuals who cannot meet the physical and mental requirements of Selective Service should be rehabilitated, but it equally strongly opposes the idea embodied in Section 23 that this responsibility belongs to the Federal government. It believes that such individuals should seek rehabilitation from the many sources of medical and hospital care that already exist and that those sources can be mobilized in a voluntary way to provide the services necessary at a cost that registrants can afford. . . .[2]

The effort to utilize an important defense measure to promote a wide expansion of government medicine is a flagrant attempt to circumvent the will of Congress and of the people. It represents a disregard for public opinion that bodes ill for the future of our country, and it must be prevented. If this extensive Federal program costing billions of dollars is set in motion, it will eventually destroy the present framework of medical care that has placed the United States of America in its present enviable position among the nations of the world and replace it with a rigid, government-controlled system.

The American Medical Association and its 52 constituent and 2,000 component societies stand ready to direct their resources to the development of a rehabilitation program for registrants with physical or mental defects that are remediable. We would be happy to cooperate with the Selective Service System and the Secretary of Defense in developing such a voluntary program, which would retain the present American system of medical care.

"We urge the Committee, therefore," Dr. Lull said, "to delete Section 23 in its entirety as unnecessary, costly in its activation, and drastic in its implications."

It is highly probable that, in the vastly increased mass of proposed Federal legislation, attempts of this kind will be repeatedly encountered. Merely because the present Congress seems to be unfavorable to socialist planners is no reason to relax our vigilant scrutiny of proposed defense measures for just such attempts to accomplish piecemeal something which could not be effected in a straightforward manner.

The urgent need for legislative action to implement the too long delayed rearmament and military expansion program of this nation is almost certain to produce a flood of bills of vast scope and effect. The policy of the administration, it would seem, has been and is to propose a tax program to implement its military and nondefense spending ideas and then to write a budget around the revenue. No serious or, as far as we know, even sham proposal has been recently made to cut nondefense spending except those of Senators Paul Douglas and Hubert Humphrey. The latter declared that "2½ billions of political fat could be boiled out of the budget."[3] The New Deal phrase "tax and tax, spend and spend" defines the order of importance politically.

Under these circumstances, it would be expecting too much of human nature and especially political human nature not to try for accomplishment, by indirection, of the socialist aims for nationalization of the profession. Keep an eye peeled for more of the same trickery.

—Editorial, *N. Y. St. J. M.*, May 1, 1950

---

[1] January 30, 1951.
[2] Comments No. 1—82nd Congress, January 31, 1951.
[3] Daily News, February 6, 1950, p. 27.

BLUE CROSS ELIMINATES HOSPITAL X-RAY SERVICE BENEFITS IN ILLINOIS

For many years numerous editorials have appeared in this publication deploring the inclusion of various medical services in most Illinois Blue Cross insurance contracts. These contracts have included an every increasing number of medical services, namely anesthetics, laboratory and x-ray examinations, electrocardiograms, physical therapy treatments, first aid treatment, and x-ray therapy. In other words, what started out to be pure hospitalization insurance now included an increasing number of medical services, which properly could only be rendered by legally licensed physicians. All this tended to drive more patients into hospitals and to centralize the practice of medicine there. We have predicted that eventually the cost for these services would become so great that the scheme would backfire, and the policies would no longer be readily saleable to those in the low income group, which is the group for which the insurance was originally designed. We have pointed out[1] that it is not necessary to include medical services in Blue Cross contracts to make them saleable and have cited the splendid success of Blue Cross in the State of Missouri, where medical services have never been included in the contract.

Apparently the rising cost of hospitalization has finally "caught up" with the Big Illinois Blue Cross Plan which includes the entire Chicago area and most of the downstate Illinois counties—approximately 2,000,000 people. Most subscribers have recently been sent an endorsement to attach to their present hospitalization contract which reads: "Hospital services shall *not* include x-ray examinations or x-ray treatments or therapy, whether rendered to a Member as an in-patient or in connection with out-patient service, the Member shall pay for all x-ray examinations, treatment and therapy."

We are proud of the part we may have played to help bring about this long delayed and much overdue change in most of Illinois and hope that the Directors of the Blue Cross Plan for Hospital Care (Ill.) will "follow through" and eliminate the other objectionable medical services, using Missouri Blue Cross as their guide. If this is done the price of the contract can be reduced and this should greatly help to cover many additional thousands of people. After all, isn't this the principal goal of the voluntary insurance plan to head off government compulsory health insurance? If everyone voluntarily carries a hospitalization insurance contract, there will be no need for, nor will the government attempt to invade such a field. H. S.

—Editorial, *Miss. Valley, M. J.*, May, 1951

---

1. Swanberg, Harold: Missouri—the State With the Ideal Blue Cross Hospitalization Contract. Mississippi Valley M. J., 69:83-84, April 1947.

NO MEDICAL EMERGENCY

Atlantic City, June 12—Declaring that "no health crisis or medical emergency exists in this country," Dr. John W. Cline of San Francisco, new President of the American Medical Association, warned here tonight that the real danger lies in the double threat of war abroad and loss of freedom at home.

In his inaugural address, broadcast nationwide during ceremonies at the 100th annual session of the AMA, Dr. Cline expressed "deep and abiding faith in the intelligence and integrity of the American people," adding that "they will respond as they did when their medical welfare and their medical freedom were threatened."

The new President of AMA thanked the American people for having "spoken out clearly and emphatically" against socialized medicine during the past two and one-half years. He called for constant vigilance, however, and said that American doctors will continue to "oppose socialistic schemes which would jeopardize the freedom of any segment of our society."

Dr. Cline, devoting the bulk of his address to a report on the nation's medical advances and on the work of the AMA, linked American medical progress with the country's tradition of freedom and initiative.

"American medicine has gone steadily forward," he said. "Some of the once great medical systems of the Old World have faltered and declined under stultifying Government control while American medicine has forged into a position of world leadership.

"American medicine could not have attained its present position without the assistance and cooperation of our educational institutions, our scientists, our colleagues in public health, our hospitals, nurses, dentists, labor and management, and all the American people—working with initiative and independence toward the same goal. Together we have made great progress in the fight against death and disease, until today we are the healthiest large nation in the world."

Outlining the many public service activities of the AMA, Dr. Cline said that "American medicine eagerly assumes its responsibility to provide medical care of ever higher standard for the American people and to bring that care progressively within easier reach of those who require it."

Referring to the medical profession's campaign against National Compulsory Health Insurance, Dr. Cline declared:

"The critical struggle to remain a free profession was not of our asking, but was forced upon us by those who have lost faith in traditional American concepts, and by those who hold the welfare of the American people to be less important than their own political advantage."

BOOK REVIEWS

Handbook of Obstetrics and Diagnostic Gynecology. By Leo Doyle, M.D., Illustrated by Ralph Sweet. Pp. 240. Paper. Price, $2.00. Palo Alto, California: University Medical Publishers, 1950.

This pocket size handbook presents the most essential features of obstetrics and diagnostic gynecology. The information it contains is well outlined and carefully indexed so that it is easily available. While the author cautions that this is neither a textbook nor a reference book, the reader will find procedures so well illustrated and the treatment so complete and up-to-date that it can be a very handy reference book for the general practitioner or even the specialist.

Hospital Staff and Office Manual. By T. M. Larkowski, M.D., and A. R. Rosanova, R. Ph., M.D. Pp. 428. Cloth. Price, $4.95. Great Neck, New York: Romaine Pierson Publishers, Inc. 1951.

The material covered in this small book includes practically all phases of medicine. This precludes any complete outline or discussion of any particular subject. Actually, it is merely an outline of essential diagnoses, practical therapeutics, diagnostic aids, laboratory procedures, technics and surgical operations. However, the information given for diagnoses, treatment, and laboratory findings, is by no means up-to-date or complete and one must refer to appropriate texts or current literature when any special disease is investigated. The authors justly point out that this book is designed to remind and guide those who are already acquainted with the essentials of medical practice.

The usefulness of this book to the general practitioner as an office manual is indeed limited; it may serve a useful purpose to medical students and hospital staffs as a refresher medical outline.

Immunology. By Noble Pierce Sherwood. M.D. Third Edition, Illustrated. Pp. 731. Cloth. Price, $8.00. St. Louis: C. V. Mosby Company, 1951.

Immunology is becoming a more important subject in medicine since the isolation of specific antibodies. The influence of nutrition, especially proteins, in the production of protective antibodies and the increase of resistance to infection are of practical importance in medicine.

This volume includes discussions of up-to-date literature and research in the underlying principles involved in infection, resistance, and diagnostic laboratory tests. Emphasis has been placed throughout on new points of view relative to natural and acquired immunity and allergy. Rh and Hr factors of human blood and hypersensitiveness due to infection are discussed in detail.

Those interested in bacteriology and communicable diseases, as well as medical students, will find this a very valuable book. A complete bibliography is given at the end of each chapter.

The Audiology Clinic. By Moe Bergman, Ed.D. Pp. 107. Paper. Price, $1.00. Chicago: The Audiology Foundation, 1104 South Wabash Avenue, 1951.

This is a monograph sponsored by the Audiology Foundation and published by the Acta Otolaryngologica. The author is chief audiologist, Audiology Clinic, New York Regional Office, Veterans Administration, New York City.

Hospitals which have started or are planning to start, a clinic for the rehabilitation of the acoustically handicapped will find this publication of value to them. The program outlined here involves education of the allied medical sciences and the public in the prevention of deafness and to the many needs of the acoustically handicapped. A complete diagnostic and prognostic hearing and speech service is stressed. ''Choosing a hearing aid'' is only a part of the function of these clinics.

A selected bibliography is given which covers the various fields of hearing rehabilitation.

The Delaware Hospital, in Wilmington, has just opened an Audiology Center to serve the people of Delaware.

Cancer As I See It. By Henry W. Abelmann, M.D. Pp. 100. Cloth. Price, $2.75. New York: Philosophical Library, 1951.

The so far unsolved riddle of cancer has brought forth many theories regarding the cause of this destructive disease. Abelmann discusses the many theories concerning the growth of cancer cells and compares them with the parasitic growth of the mold fungus. He entertains the possibility of cancer being a chronic infectious disease.

As has been the policy of the cancer societies, the author emphasizes the importance of educating the public to the necessities of undergoing periodic examinations in the hope that cancer may be detected and treated early.

The reasoning and examples given by the author should be of interest to all individuals working in the field of cancer. The laity as well as the medical profession will find this little book stimulating.

The Hebrew Medicol Journal

The appearance of the Spring issue, Volume 1, 1951, of THE HEBREW MEDICAL JOURNAL (Harofe Haivri) inaugurates the 24th successful year of its publication under the editorship of Moses Einhorn, M.D. Written in Hebrew, with English summaries, the Journal is a contribution to the development of the Hebrew medical literature, and thus aids the newly established Hebrew University Medical School in Jerusalem.

In the medical section, among the articles of interest are: Brain Tumors—Prognosis Based on Their Morphology, by Dr. Joseph H. Globus of Mt. Sinai Hospital; The Modern Approach to the Management of the Failing Heart, by Dr. A. B. Rimmerman, of Chicago; and Modern Concepts in the Diagnosis and Treatment of Marital Infertility, by Dr. Abner I. Weisman, of New York City.

Under the heading of "Israel and Health", Dr. Chaim Berlin discusses "Venereal Diseases in Israel", and the subject "The Care of Deaf-Mutes in Israel" is presented by Dr. Mordecai Hexter.

In the section Old Hebrew Medical Manuscripts, Dr. Zussmann Muntner, of Jerusalem, presents a treatise on Persian Medicine and Its Relation to Jewish and Other Medical Science—Commemorating the Millennium of Avicenna; and Dr. Leon Nemoy, of Yale University, writes on Medical Material in the Code of Karaite Law of Elijah Bashyatchi.

For further information, communicate with the editorial office of the Hebrew Medical Journal, 983 Park Avenue, New York 28, N. Y.

No More Rebotes

The Commissioner of Internal Revenue of the United States has stated that amounts paid by taxpayers engaged in the business of grinding, fitting and selling eyeglasses and spectacles to oculists, and representing one-third of the retail price of all eyeglasses and spectacles purchased by patients sent to them by oculists are not deductible on income tax returns.

And a Federal Court has ruled that since these kickbacks "corrupt the fiduciary relationship between physicians and patients and result in a violation of the duty of loyalty, they are opposed to public policy and therefore not deductible as ordinary and necessary business expenses by these taxpayers."

As a result, 3300 eye doctors and four optical companies pledged themselves not to give or accept rebates on glasses and thus ended a five-year civil anti-trust suit at Chicago.

The Government says the Court's ruling will "deal a death blow to the rebating practice in the optical industry," and points out that the medical profession has always been opposed to such practices.

In the Principles of Medical Ethics of the American Medical Association, is the following:

"It is unprofessional to accept rebates on prescriptions or appliances, or perquisites from attendants who aid in the care of the patients.

"When a patient is referred by one physician to another for consultation or for treatment, whether the physician in charge accompanies the patient or not, it is unethical to give or to receive a commission by whatever it may be called or under any guise or pretext whatsoever."

It is a healthy habit to study the Principles of Medical Ethics once in a while and so conduct ourselves that the profession to which we have dedicated our lives may continue to be a shining light and a gleaming example of unselfish service to all mankind.

To this end all doctors can give material aid in the extermination of unethical practices by reporting in future any violations that come to their attention.

Phila. Med., June 16, 1951.

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 7

JULY, 1951

Per Copy, 50c
Per Year, $4.00

HEMOLYTIC ANEMIA IN INFECTIOUS MONONUCLEOSIS*

A Case Report

Park W. Huntington, Jr., M. D.**
Wilmington, Del.

Anemia occurring in infectious mononucleosis is a rare complication and a confusing one, since the occurrence of an anemia with a lymphocytosis is one of the criteria for establishing the diagnosis of a lymphatic leukemia. The recent literature records three cases of hemolytic anemia occurring in infectious mononucleosis in the past two years.

Appleman and Morrison[1] reported a 22 year old white male with fever, icterus, cervical adenopathy, and splenomegaly. The red count and hemoglobin were severely depressed. Atypical lymphocytes and spherocytes were noted in the differential count. Heterophile agglutination tests were positive. The red cell fragility was slightly increased, and the cephalin flocculation was positive. Tests for cold agglutinins were negative. There was no familial history of anemia. The patient responded to repeated transfusions and recovered.

Wilson, Ward, and Gray[7] reported a case of a young Negro male with lymphadenopathy, splenomegaly, and moderately increased fragility of red cells. The diagnosis of infectious mononucleosis was confirmed by the presence of many atypical lymphocytes in the peripheral blood and a strongly positive heterophile agglutination test. A splenectomy was

TABLE 1

AGGLUTINATING AND HEMOLYZING ANTIBODIES IN DH CASE 145969*
(IN ALBUMIN)

4/12/51	Auto Agglutinins	Auto Hemolysins	Iso Agglutinins	Iso Hemolysins	Coombs Test	Heterophile Test
37°	0	1-16	0	1-16	STRONGLY POSITIVE	1:896
22°	0	1-16	0	1-16		
3°	1-16	1-16	1-16	1-16		
4/16/51		ACTH STARTED				
37°	0	0	0	0	POSITIVE	1:896
22°	1-8	0	1-2	0		
3°	1-16	0	1-16	0		
4/18/51						
37°	0	0	0	0	POSITIVE	1:448
22°	0	0	0	0		
3°	1-2	0	1-2	0		
4/25/51		ACTH STOPPED				
37°	0	0	0	0	MODERATELY POSITIVE	1:224
22°	0	0	0	0		
3°	1-4	0	1-4	0		
5/2/51						
37°	0	0	0	0	SAME	1:122
22°	0	0	0	0		
3°	1-1	0	0	0		

*Only highest positive dilution reported.

---

*Presented at Staff meeting, Delaware Hospital, May 8, 1951.

**Resident in Pathology, Delaware Hospital.

performed to control hemolysis, and the patient improved rapidly.

Small and Hadley[6] report a case of a young white female who had atypical lymphocytes and heterophile antibodies present. A severe anemia developed, complicating the infectious mononucleosis. Spherocytes and increased red cell fragility were absent. Reticulocytes were greatly increased. The patient improved rapidly without any apparent treatment directed toward the anemia.

Coombs test and antibody titres were not recorded in any of these cases.

We have recently had the opportunity to closely follow a case of infectious mononucleosis with a complicating hemolytic anemia. The clinical history is as follows:

Case Report

The patient, an eight year old white male, was admitted to the Delaware Hospital on 4/2/51 with puffiness about the eyes, vomiting, fatigue and malaise. The patient was well until three weeks prior to admission when he developed an upper respiratory infection which lasted for three days and subsided spontaneously. Two days before admission periorbital edema was noted and malaise with vomiting began. Physical examination, on admission, revealed palpable cervical lymph nodes, slight edema of the upper eyelids, a questionably palpable liver and spleen, temperature of 98.8°F., red blood count 4.1 million, and hemoglobin of 11.1 gm. (71%). The white blood count and differential were normal. Urinalysis showed +4 albuminuria with red cells and casts present. Blood urea nitrogen was 53 mg.%. There was a reversal of the plasma A-G ratio. Red cell fragility was normal, and the icterus index slightly increased. On 4/9/51 BUN had returned to normal.

On 4/5/51 the white count rose to 16,400 with 54% lymphocytes, and occasional atypical lymphocytes. On 4/8/51 WBC was 6,800 with 50% lmyphocytes, 18% atypical forms. On 4/5/51 the red blood count dropped suddenly to 3.2 million, hemoglobin to 9.6 gm. Urinalysis continued to show albuminuria with red cells and casts. The heterophile antibody test was positive at a titre of 1:1792 (1:896 with G.P. Kidney adsorption) and the Coombs test was strongly positive.

Because of the anemia which was considered to be an acquired hemolytic type, ACTH was begun with a dosage of 20 mg. every 6 hours on 4/12/51. Two weeks following admission (4/16/51) the patient appeared clinically well, with only a few nodes remaining palpable. On 4/18/51 the ACTH dosage was reduced to 20 mg. every 12 hours. The patient was discharged on 4/22/51 following a total of 600 mg. of ACTH. His red cell count at this time was 3.1 million, hemoglobin 57%. The urine was free of albumin and casts, and only a few red cells persisted. The heterophile agglutinins were 1:224, and the Coombs test was moderately positive.

The renal involvement in this case is best explained as an infiltration of mononucleosis cells into the kidney parenchyma. Custer[2] states: "The renal lesion of infectious mononucleosis is essentially an intestitial nephritis, and albuminuria is common."

To properly define the type of hemolytic anemia present, a differentiation between the congenital and acquired types must be made. In the acquired type there is an "extrinsic mechanism acting upon normal blood cells, injuring them and leading to an increased rate of destruction."[4] The most important laboratory test for this differentiation is the Coombs test. A positive Coombs test demonstrates qualitatively the presence of antibodies reacting against the patient's own red cells and the acquired nature of the hemolysis. The nature of the hemolytic abnormality can be further demonstrated by serially diluting the patient's serum and testing for both agglutinating (clumping) and hemolyzing (dissolving) antibodies at 37°C, body temperature; 22°C, room temperature; and 3°C, ice box temperature. Autoantibodies, which react against the patient's own cells, and isoantibodies, which react against the red cells of another person are also differentiated. Albumin as a dilutent in serial titration further enhances the reactability.[5] The heterophile antibody test is run on serum which has been adsorbed with guinea pig kidney (Davidsohn's test); this further proves the diagnosis of infectious mononucleosis and rules out serum sickness.

Before treatment was begun, the patient had auto and iso agglutinins present at all dilutions at ice box temperature, hemolysins were present at all temperatures in the albumin medium. Four days later, after ACTH was started, the cold agglutinins were still present and some agglutinins were present at 22°C, while most of the hemolysins had disappeared. Six days later all the hemolysins were gone and the agglutinins were only barely demonstrable. The heterophile test fell from a titre of 1:1,792 to 1:224 in sixteen days. (Table I)

Treatment with ACTH was begun because of the known effectiveness in acquired hemolytic anemia.[4] Its mode of action is speculation: either it depresses lymphoid tissue, the site of antibody formation, or it actually destroys the damaging antibodies after they are produced. Its use in this case further demonstrates its effectiveness.

REFERENCES

1) Appleman, D. H. and Morrison, M. M.: Concomitant Infectious Mononucleosis and Hemolytic Anemia, Jour. Hemat., 4: 186-188, 1949.
2) Custer, R. P.; Smith, E. B.: The Pathology of Infectious Mononucleosis, Jour. Hemat., 3: 830-857, 1948.
3) Dameshek, W.; Miller, E. B.: Pathogenic Mechanisms in Hemolytic Anemias, Arch. Int. Med., 72: 1-17, July, 1943.
4) Dameshek, W.; Rosenthal, M. D.; Schwartz, L. I.: The Treatment of Acquired Hemolytic Anemia with Cortisone, New Eng. Jour. Med., 244: 117-127, 1951.
5) Neper, J.; Dameshek, W.: The Improved Demonstration of Circulating Antibodies in Hemolytic Anemia, Jour. Hemat., 2: 371-380, 1947.
6) Small, C. S.; Hadley, G. C.: Acute Hemolytic Anemia Complicating Infectious Mononucleosis, Jour. Clin. Path., 20: 1056, 1950.
7) Wilson, S. J.; Ward, C. E.; Gray, L. W.: Infectious Lymphadenosis (Mononucleosis) and Hemolytic Anemia in a Negro, Jour. Hemat., 4: 189-192, 1949.

THE APPLICATION OF BLEEDING AND COAGULATION STUDIES IN THE HOSPITAL*

Anne Dunbar Richman, M. D.**
and
William J. Hoopes, M. D.
Wilmington, Del.

Recently, there has been an increasing trend to discard the routine use of bleeding and capillary coagulation times on T & A patients and babies for circumcision because of their known inadequacies in predicting hemorrhage. More often these tests give a false sense of security. Wintrobe[12] stated years ago: "The determination of coagulation time, no matter how accurately it is measured, is of limited value for it fails to distinguish between the various factors which may alter the coagulation of blood."

The normal capillary coagulation time varies from 2-10 minutes depending upon the method used. The Lee White Method with carefully drawn venous blood to avoid the admixtures of tissue juice is considered the most accurate method generally available. However, there is no justification for the routine use of such a test which requires great care and is time consuming. It is of the greatest importance in those cases in which history or physical examination indicate the possibility of some hemorrhagic disorder.

Tests for bleeding time vary greatly since the depth of the puncture, the vascularity of the area punctured, the tissue turgor and vascular elasticity are controlling factors. A carefully controlled bleeding time is normally 1-3 minutes.

The following concept of hemostasis permits a modern classification of hemorrhagic disease.[2]

(1) Thromboplastinogen which is present in plasma plus a platelet activator (thromboplastinogenase) which is obtained from disintegrating platelets yields thromboplastin.

(2) Thromboplastin plus a prothrombin complex (Prothrombin, Ca, and plasma labile factor) yields thrombin.

(3) Fibrinogen plus thrombin yields fibrin.

The thrombin in addition to converting fibrinogen to fibrin causes labilization of platelets. As a result, more thromboplastinogen becomes activated and a chain reaction is initiated. The lysis of platelets causes the liberation of a powerful vasoconstrictor which Stewart and Zucker[9] recognized in 1913 as a basic hemostatic factor. In hemophilia, a congenital and hereditary deficiency of thromboplastinogen occurs. As a result, very little thrombin is formed and relatively few platelets disintegrate. The chain reaction fails to be initiated and inadequate amounts of vasoconstrictor agent are liberated. In thrombocytopenic purpura, there is a decrease in platelets with resulting decrease in thromboplastinogenase. Thus, only a small portion of thromboplastinogen can be converted to thromboplastin.

Blood dyscrasias which may cause operative or postoperative hemorrhage have been classified by Stefanini:[6]

---

*Presented at Staff Meeting, Delaware Hospital, May 8, 1951.

**Residents in Pathology and Surgery, respectively, Delaware Hospital.

- I Diseases due to depletion of known Coagulation Factors
  - A. Hypothromboplastinemias (defective activation of thromboplastin)
    - (1) Hemophilia (Deficiency of thromboplastinogen)
    - (2) Thrombocytopenic purpura and Thrombocytopenias (Deficiency Thromboplastinogenase)
    - (3) Thrombasthenia
  - B. Hypoprothrombinemias (Deficient prothrombin activity)
    - (1) Hypoprothrombinemia
      - (a) Congenital
      - (b) Acquired
        - (1) Responsive to Vitamin K
          - (a) Insufficient intake Vitamin K; dietary, newborn, chemotherapy with antibiotics and destruction of the normal intestinal bacterial flora)
          - (b) Insufficient absorption Vitamin K; lack of biliary salts, accelerated intestinal transit.
        - (2) Partially or not responsive to Vitamin K: insufficient utilization of Vitamin K: liver dysfunction, dicumarol and salicylate therapy.
    - (2) Deficiency of Labile Factor
      - (a) Congenital
      - (b) Acquired: liver dysfunction; leukemias
  - C. Afibrinogenemia and Hypofibrinogenemia
    - (1) Congenital Afibrinogenemia (10 reported cases)
    - (2) Congenital Hypofibrinogenemia
    - (3) Acquired Hypofibrinogenemia: liver dysfunction; pernicious anemia; leukemia; pellagra, scurvy, etc.
- II Diseases due to Circulating Anticoagulants
  - A. Acquired hemophilia-like disease (circulating antithromboplastinogenase)
  - B. Heparinemia (circulating heparin and heparin-like substances):
    total body irradiation; peptone shock; ? Thrombocytopenic purpura; ? Acute and chronic leukemia.
  - C. Purpura Fibrinolytica: (high fibrinolytic activity of plasma):
    purpura thrombolytica; liver dysfunction; premature separation of the placenta.

In the diagnosis of any of these dyscrasias, an adequate history and good physical examination are of most importance. In hemophilia, the coagulation time is usually found to be prolonged provided the test is done on venous blood when carefully collected to avoid contamination with tissue juice. Quick,[2] however, states, "clotting time methods based on capillary blood are worthless and misleading." Several examples support this statement. Such a case was seen at the Delaware Hospital on 4-20-48 following a minor head injury. There had been a long history of hemorrhage into skin joints, GI tract and the central nervous system. The grandfather has been a hemophiliac. The highest average capillary coagulation time over a two year period was eight minutes, with an average of 4 minutes. Quick[4] reports that he did a coagulation time with the Lee White technique on the venous blood of one of his hemophiliac patients and found that it was 80 minutes. A few days later, at a general hospital, the capillary coagulation time was reported as four and a half minutes. Robbins,[5] likewise, has reported a sailor who had several hospitalizations for abnormal bleeding. On re-enlisting, a diagnosis of hemophilia was not properly made because only normal capillary coagulation times had been reported.

In 1949, Quick[3] developed a valuable new diagnostic aid, the prothrombin consumption test. Blood is allowed to clot under controlled conditions and the remaining prothrombin indicates the degree of thromboplastinogen deficiency. The greater quantity of available thromboplastin in the blood, the more prothrombin will be consumed and the longer will be the prothrombin time of the serum. In both hemophilia and thrombocytopenia, such a small amount of active thromboplastin is available that only a limited amount of prothrombin can be consumed and the shorter will be the prothrombin time of the serum. In hemophilia, there is a good clot retraction and normal thrombocyte count, in purpura, both are usually abnormal.

In order to evaluate the current feeling in numerous important medical centers in the country regarding routine bleeding and coagulation times, a survey was conducted. Dr. T. L. Saunders of the New York Eye and Ear Infirmary, Dr. A. A. Eggston of the Manhattan Eye and Throat Hospital and Dr. Armand J. Quick, Marquette University School of Medicine, have shown that they no longer use routine bleeding and capillary coagulation times and believe them to be of no value. Dr. Eggston[1] stated: "I see no reason for doing them unless it acts as a satisfactory psychological procedure for the patient and doctor, otherwise I think the time consumed is wasted."

Dr. L. M. Tocantins[11] of the Department of Medicine at Jefferson commented: "It seems that the reason why the bleeding time and capillary coagulation time are done on T & A and circumcision patients is because the surgeons want to be protected against possible accusations of malpractice, if the patient should bleed excessively and the tests have not been done. As the tests are run in most hospitals, they seem to be useless and sometimes misleading."

Dr. Max M. Strumia[10] of the Bryn Mawr Hospital replied that 90% of hemophiliacs have a sufficiently delayed coagulation time to be picked up by a coagulation time determination but that "otherwise, there is little value in coagulation time." The bleeding time, he believes, gives "a certain sense of security to the surgeon." He stated that they had considered omitting these tests as routine procedures but "feel that it would be entirely too great a responsibility for the pathologist to advise discontinuance of the practice mentioned above because any excessive bleeding following operation would unquestionably be attributed to the action of the Pathologist."

Dr. Mario Stefanini[8] of the New England Center Hospital said: "I do agree with you completely that capillary coagulation time is a completely useless procedure which will fail to pick up the most important conditions a pediatric surgeon is interested in. Specifically, the test will give normal results in hemophilia. The value of the bleeding time in the new born is also very dubious and the only test that is probably of some value is represented, in my opinion, by the prothrombin time on *venous blood*. At the Boston Floating Hospital, the Pediatric Service of our Institution, we usually perform a prothrombin time on venous blood if at all feasible, especially if the baby presented evidence of physiologic jaundice or mild hypoprothrombinemia at birth."

Dr. Quick[4] most ably summarizes our feelings when he states: "To the best of my knowledge, there are no simple tests that can be employed routinely. Instead of depending upon laboratory tests, a careful history regarding a hemorrhage tendency should be made on every surgical patient and a question concerning bleeding in the family should be asked. It is also well in doing the physical examination to look for bruises or petechia. If there is a history of excessive bruising, then a hematological study should be made. In our experience, the prothrombin time, prothrombin consumption time, a carefully done bleeding time and a platelet count will usually be sufficient to establish hemostatic defect and to make a diagnosis."

Summary

1. The current concept of hemostasis is presented.
2. Today, the routine bleeding and capillary coagulation times on T & A patients and babies for circumcision are of value only as a psychological procedure for the doctor and patient.
3. An adequate history and good physical examination are of most importance preoperatively.
4. In a suspected case of hemostatic defect, the tests which are of most value in establishing a diagnosis are:
   1) The prothrombin time
   2) The prothrombin consumption time
   3) A carefully done bleeding time
   4) A platelet count.

REFERENCES

1. Eggston, A. A.: Personal Communication.
2. Quick, Armand J.: Management of Hemophilia in General Practice, JAMA, 145: 4-8, (January 6) 1951.
3. Quick, Armand J.: The Coagulation Mechanism, Am. Jour. Clin. Path. 19: 1016, (Nov.), 1949.

4. Quick, Armand J.: Personal Communication.
5. Robbins, J. J.: Hemophilia, Report of a Case, U. S. Nav. Med. Bull., 49: 1115, (Nov.-Dec.) 1949.
6. Stefanini, Mario: Newer Concepts of the Coagulation of Blood, Bull. New Eng. Med. Center, 12: 51-60 (April) 1950.
7. Stefanini, Mario: The Diagnosis of Hemorrhagic Diseases, Bull. New Eng. Med. Center, 12: 102-114 (June) 1950.
8. Stefanini, Mario: Personal Communication.
9. Stewart, G. N. and Zucker, T. F.: Comparison of Action of Plasma and Serum on Certain Objects Used in Biological Tests for Epinephrin, Jour. Exper. Med., 7: 152, 1913.
10. Strumia, Max M.: Personal Communication.
11. Tocantins, L. M.: Personal Communication.
12. Wintrobe, M. M.: Clinical Hematology, 2nd ed. p. 206. Philadelphia: Lee & Febiger, 1946.

A SURVEY OF TRANSFUSION REACTIONS 1949-1950*

CHOW CHING TE, M. D.,**
and
JOHN W. HOWARD, M. D.,***
Wilmington, Del.

The annual increase in the number of blood transfusions at the Delaware Hospital shows how readily blood is being used for therapy. The availability and the ease of obtaining blood, the increased scope of surgical procedures, and the knowledge that plasma cannot adequately substitute for whole blood has promoted this increased use of blood and has resulted in administration of blood as a routine procedure, often without careful consideration of the real need.

Our 1949-1950 survey shows that the common indication for blood transfusion are:

To restore blood volume to prevent and treat shock.

To correct hypoproteinemia.

To correct anemia of diverse origin.

To restore normal clotting mechanisms.

To supply antibodies in the treatment of infectious diseases.

Until it has been shown that blood transfusion therapy entails no risk to the patient, it should be employed only when a real indication exists. Unfortunately, this principle is not always followed. On the other hand, when transfusions are needed, they should be given without delay and in adequate dosage.

In these days of casual transfusions the selection of donors is most important. A brief history and a preliminary examination should be made routinely on each person prior to donation. The following important criteria are met:

A minimum hemoglobin concentration of 80%.

A systolic blood pressure below 200mm. and a diastolic pressure below 110 mm. or a systolic blood pressure above 110 mm.

When these criteria are not met a further check is instituted with the family physician to find out if the donor is acceptable.

A temperature over 99.5°.

To eliminate lipemic donor blood, persons should not have eaten a fatty meal within four hours of the donation.

Donors must be free of diseases transmittable by blood, such as syphilis, malaria, infectious hepatitis, etc.

Recent studies indicating that malaria and infectious hepatitis may be transmitted many years after the initial illness has forced the Blood Bank to reject many otherwise satisfactory donors.

The commonest reason for donor rejections has been hypertension in men and a low hemoglobin in women. Many donors, too, have been deferred because they have had a fatty meal two to three hours prior to the donation.

TABLE 1

Reactions following Blood Transfusions

	1947-1948		1949		1950		1947-1950	
	Number	Reactions	Number	Reactions	Number	Reactions	Number	Reactions
Grade I			6	0.26	12	0.43		
Grade II			56	2.40	26	0.94		
Grade III			60	2.58	20	0.73		
Grade IV			0	0.00	1	0.04		
Ungraded			3	0.13	2	0.08		
Reaction Total	79	4.0%	125	5.37%	61	2.25%	265	3.8%
Total Transfusions			2324		2752		6995	

---

*Presented at Staff Meeting, Delaware Hospital, May 8, 1951.

**Resident in Pathology.

***Director, Department of Pathology.

REACTIONS

The reactions attributed to blood transfusions are many and diversified in type. They may, for convenience, be grouped under four main headings.[1]

Hyperpyrexia Reactions. This type of reaction usually manifests itself by rise of temperature from 1° to 4°F. occurring during or within the hour of transfusion. The fever lasts less than four hours and usually subsides unless something interferes with it. One usually expects a greater rise of temperature in postoperative cases if a reaction does occur to distinguish it from the expected postoperative rise of temperature. The fever is usually preceded by chilliness and a flushed skin. This type of reaction is usually considered to be pyrogenic, but in our experience we have seen it very commonly in apprehensive patients or those in which there is a peculiar allergic complex. Frequently mild sedation, antihistamine therapy prophylactically, and or a decrease in the total volume of blood administered, completely eliminates temperature elevation even when using the same blood that previously caused a rise.

Allergic Reactions. Hives and occasional angioneurotic edema may occur after transfusions. It is generally conceded to be a result of the food content in the donor's plasma. The reactions are frequently dramatic, and, in general, cause more alarm on the part of the patient and the floor nurses than a more serious type of reaction. The use of fasting donors, we believe, materially reduces this type of reaction.

Circulatory Reactions. This type of difficulty is usually seen in patients with chronic circulatory diseases. It usually occurs as a result of a disturbance of cardiac or pulmonary mechanisms following a circulatory overload. Too rapid administration (a rate greater than 20 cc. per minute) and the administration of excessive blood volume may result in right-sided heart failure, pulmonary congestion, edema, cyanosis, sweating, sudden fall in blood pressure. Excessive transfusion when the hemoglobin is of an average percent or too rapid correction of a severe anemia will likewise produce this difficulty.

Hemolytic Reactions. The goal of all blood banks is to eliminate this type of reaction. It is the only serious type of transfusion reaction and is the one that makes transfusion medication a serious responsibility. When one is unfortunate enough to have such a reaction, investigation should be instantly instituted which will aid in the diagnosis, so that immediate intelligent treatment can be started. This type of reaction may at some times be so mild as to go unnoticed, and at other times severe enough to result in sudden death. When anuria develops a hemolytic reaction should always be considered a possibility. The reaction usually exhibits itself by symptoms of shock, sudden severe lumbar pain, dypspnea, and cyanosis. If the reaction occurs on the operating table with the patient under general anesthesia, the recognition of this type of reaction is almost impossible. It is said that there is usually a hemorrhage tendency demonstrated under such circumstances by increased bleeding and oozing at the operative site. However, such an evaluation would, indeed, be most difficult. Following any indication of such a hemolytic type of reaction, blood should be discontinued immediately, a urine specimen should be obtained and examined carefully for evidence of hemoglobinuria, and a sample of the recipient's blood at the time of occurrence withdrawn to check the presence of free hemoglobin.

TRANSFUSION SERVICE REPORT

The total number of pints of blood acquired in 1949 was 2,941 and 3,406 in 1950. A larger percentage of this number was obtained from friends and relatives, but each year approximately 10% has been obtained from commercial blood banks to meet current demands. The number of donor bloods for each transfusion unit in 1949 was 1.26 and in 1950 1.24. This is an average that has varied little over a period of ten years and conclusively proves that no bank can run on a one-for-one basis without additional assistance. While the number of blood transfusions increased from 2324 to 2752 in 1949-1950, the plasma (250 cc. units) decreased from 300 to 289.

The accompanying table shows a summary of the reactions from transfusion in 1949 and 1950 as compared with that previously reported[2]; grade I—urticarial; grade II—that of a temperature rise; grade III—chills and fever; and grade IV—hemolytic. Ungraded reactions are those in which there is insufficient information to permit proper grading or the manifestations are completely atypical or questionable. Grades I and II are insignificant types of reactions and in some instances it is almost impossible to distinguish between the rise in temperature that one would expect or find following an operation or occurring in a natural course of a particular illness.

In 1949 the total reaction rate was 5.37% which is higher than the 4% previously reported on a series from April '47 to August '48. In this 1949 period it is interesting to note that 52 reactions occurred in July and August during unusually hot weather. The decrease in 1950 may be misleading because of the trend during the last two years to administer blood at the time of operation and under anesthesia where reactions are difficult to survey. In 1950 approximately 25% of the transfusions were administered under such circumstances. One grade IV hemolytic type of reaction occurred in 1950. Although the reaction was mild, the patient received AB blood instead of A and was credited with a grade IV reaction. These severe reactions are usually accounted for by incompatibility and high titre blood. It is our feeling that the incidence of this type of reaction due to human error has been greatly reduced by employing neutralized and low titered blood. Because certain O donors have an unusually high antibody titre which can cause severe reactions, it is necessary to routinely check all O bloods and determine which have a titre below 1-200 which is generally considered perfectly safe. Those with moderately high titres are neutralized with A and B specific substance to reduce the amount of isoagglutinins. Those with extremely high titres are reserved for cross-matched type specific transfusions.[3]

Of the total number of transfusions by far the greatest number were homologous or type specific.

1949

	No.	Reactions	Percentage
Homologous	2047	120	5.8
Low-titer O Rh specific	110	5	4.5
Neutralized O Rh specific	167	0	0

1950

Homologous	2298	52	2.3
Low-titer O Rh specific	337	7	2.1
Neutralized O Rh specific	117	1	0.9

In the conditioned group of O neutralized or low titered blood our experience again has demonstrated the safety and advantages of these convenient blood types. Others have reported similar experiences.[4,5]

Table 2 enumerates the reactions in relation to underlying disease.

TABLE 2

	1949	1950
Gynecology	34	20
Anemia	35	9
Malignancy	22	6
Ulcer	8	4
Infection	7	3
Leukemia	0	8
Miscellaneous	19	11
Total	125	61

As previously noted[2] the highest incidences of reactions occur with Gynecological patients, anemias, and malignancies. These, of course, represent the majority of patients receiving transfusions, but it is well to remember when ordering transfusions that these patients do run a greater chance of having a non-hemolytic type of reaction.

Newer developments in regard to the transfusion services in the hospitals around the country have been directed to research in the field of substitute equipment for glass and newer types of anti-coagulants of particular importance for those people working with fractionation of plasma where the citrate and glass effect the white cells. Experimental use of plastic equipment and cation exchange resins as a substitute for anti-coagulants have shown some promise. Their benefit for routine blood bank use, however, has not yet been demonstrated.

REFERENCES

1. Hargraves, Malcolm M.: Transfusion Reactions and Their Treatments. Med. Clin. N. A., 803 July, 1947.
2. Moore, Walter and Howard, John W.: Blood Transfusions and Transfusion Reactions, Del. St. Med. Jour., 21: 1, (Jan.) 1949.
3. Klendshoj, N. C. and Witebsky, E.: Transfusion of 0 Blood Conditioned by the Addition of Blood Group Specific Substances. JAMA, 128: 1091, 1945.
4. Witebsky, E., Klendshoj, N. C., and Swanson, P.: Preparation and Transfusion of Safe Universal Blood, JAMA, 116: 2654, 1941.
5. Klendshoj, N. C. and Witebsky, E.: Reaction to Single and Multiple Transfusions — Comparison between Homologous and Conditioned 0 Blood Transfusions, Jour. Hemat., 5: 518, 1950.

CONTACT DERMATITIS*

Allen D. King, M. D.**
Wilmington, Del.

The term contact dermatitis or dermatitis venenata, is used to refer to a large group of dermatoses caused by contact of the skin with a specific external substance. Many of these are connected directly or indirectly with the individual's occupation, and are classified as occupational dermatoses. These cases are numerous, differ widely as to cause and have been the subject of numerous case reports, monographs and text books. It is the purpose of this paper to discuss contact dermatitis, with special reference to a second large group, encountered in every day life and excluding those of industrial or occupational origin.

Contact dermatitis is a specific irritation of the skin, usually eczematous in nature, due to contact between the skin and the causative agent. The eruption appears first, and is usually most severe, at the site of contact. It is not necessarily limited to the primary areas however. It may develop rapidly after exposure to a primary irritant, or because of sensitization. Again the onset may be insidious, as the result of slowly acting irritants such as solvents and alkalies. The distribution of the eruption is not necessarily to exposed surfaces of the body, in contrast to the majority of industrial dermatoses. As a matter of fact, the lesions may occur in unusual sites, be of bizarre shape or be symmetrical. Symptoms include pruritus, discomfort due to edema and varying degrees of incapacitation depending on the severity of the process, and the location and extent of skin involvement. Fever, malaise are uncommon.

Predisposing causes are important and include age, sex, perspiration, season. The incidence of dermatitis from plants, notably poison ivy, is much greater among children than adults. Conversely eruptions due to cosmetics are essentially a problem of adult females. Perspiration is a necessary factor in the development of certain cases, such as nickel dermatitis, and these cases may have mild, or no symptoms during the winter months.

The diagnosis of non occupational contact dermatitis may be obvious at a glance, like certain cases of poison ivy dermatitis or it may be exceedingly difficult. A careful detailed history is of utmost importance and should be taken even in the clear cut cases. This is facilitated by a working knowledge of the more common causes of dermatitis venenata, and the bearing of pre-disposing factors on the case.

The dermatological examination is likewise important and should take place with the majority of the patient's clothing removed. A careful scrutiny of the affected skin, followed by a brief examination of the remaining areas enables the examinor to visualize the extent of the eruption and to discover or eliminate other cutaneous disorders.

The study of contact dermatoses may be simplified by the group method. For instance, plants, including rhus toxicodendron or poison ivy, cause far more cases than does any other group of substances. A second important group is cosmetics, another fabrics and their finishes. Household contacts are involved in studying cases of eczematous eruptioins of the hands of women.

Important members of the plant family for Delaware and vicinity are the ivy, oak and sumac, the potted primrose, chrysanthemums and geraniums. Nail polish and perfumes dominate the cosmetic group. Sizings and dyestuffs, and accessories such as elastic, are generally more important than the fabrics themselves. Detergents, solvents, plastics, waxes, fruits and spices are some of the principal offenders in the household group contacts.

The treatment of the mild and localized cases of contact dermatitis is not difficult and includes rest of the affected area, wet dressings or soothing local applications. Liquor aluminum acetate solution in strength of 1 to 32 parts tepid woter, or potassium permanganate solution, one to 5,000 form serviceable wet dressings. Calamine lotion, antihistaminic lotions and the several calamine type creams may be applied freely. Rest in bed or hospitalization may be indicated in certain severe cases. Cortisone or A. C. T. H., on a dosage schedule comparable to that used in rheumatoid arthritis is a recent and efficient procedure and will be used with increasing frequency as it becomes more available.

---

*Read at Staff Meeting, of Delaware Hospital, March 13, 1951.

**Director, Dermatology Division, Delaware Hospital.

An important part in the management of contact dermatitis is to determine the cause. Often times it is obvious. On the other hand, the offending agent may be unsuspected and repeated outbreaks of dermatitis can occur. Most of the obscure cases can be solved by careful history taking and the employment of patch testing to demonstrate the specific causative agent.

In conclusion, it may be stated that contact dermatitis is of frequent occurrence and concerns the general practitioner as well as the specialist. Its therapy is not difficult. The causative agent may be obscure. It is important to discover and eliminate the cause; otherwise, chronicity or repeated occurrences may be expected.

Interest in this subject has been stimulated by three cases seen within a two month interval, with symmetrical involvement of the feet, each case being the result of sensitivity to rubber compounds used in the composition of shoes.

Case No. 1. R. M. Female, age 46, with symmetrical band-like dermatitis across the dorsum of both feet. Recurrent flare ups for four weeks, last outbreak after patient attended church. Her "Sunday shoes," shown in photograph, contained broad elastic band around their tops. No recurrence after shoes were discarded. Patch test not obtained. (Fig. 1)

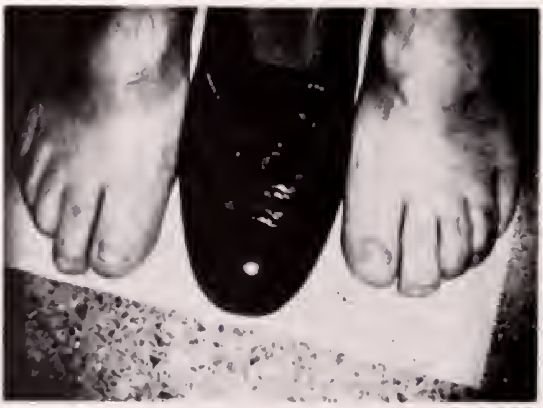


Fig. 1

Case No. 2. A. M. Male, age 37. Bullous dermatitis involving entire dorsum and sides of both feet, as well as toes. Mild antecedent outbreaks for previous month, diagnosed "mycotic" and treated as such by family physician. Present acute flare up followed an unusual combination of wet rubber safety shoes and long hours. Dermatitis cleared rapidly under bland local therapy. Patch tests made of material from rubber safety shoes were as follows: (Fig. 2)

1. Rubber side down 3 +
2. Fabric side down 1 +

Case No. 3. E. P. This patient first seen in 1938 with acute dermatitis of axillae due to rubber dress shields. Ten months later seen with dermatitis on thighs due to garter elastic. One year later she was seen with more axillary dermatitis, patient thinking she had overcome her allergic state and used rubber shields again. Successive attacks followed purchase of a rubber bathing cap, and the use of adhesive tape. One year later, dermatitis of lips and right forearm developed after a tooth extraction caused by the gas mask and rubber restraining strap. While hospitalized, dermatitis of the backs of her legs and arms developed, proven to be the result of rubber pad beneath the sheet in her bed. Twice during 1949 small areas of dermatitis developed on dorsum of feet caused by elastic in the bow of her shoes. The last episode is illustrated in the photograph. This consisted of a bullous dermatitis in a striking geometric pattern corresponding to the configuration of a pair of sport shoes, lined with

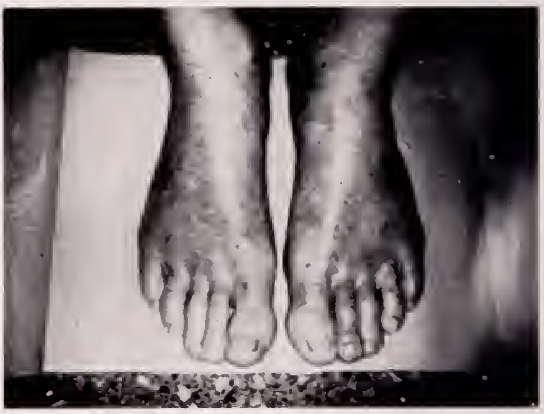


Fig. 2

rubber composition. Patch test positive. Prompt recovery under bland local therapy. (Fig. 3)

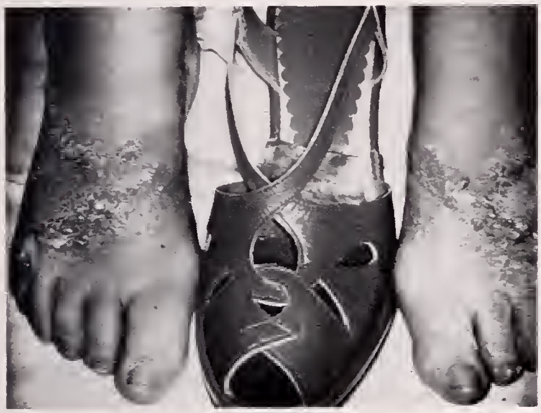


Fig. 3

COMMON VIRUS DISEASES OF THE SKIN

Lawrence Katzenstein, M. D.*
Wilmington, Del.

Common virus diseases of the skin, rarely associated with systemic reactions, are herpes simplex, herpes zoster, molluscum contagiosum, warts, and lymphogranuloma venereum.

The primary infection of herpes simplex in man may be manifested during early childhood as acute herpetic gingivostomatitis. Children infected are acutely ill and irritable with sore mouths, foul breath, fever, and submental lymphadenopathy. On the mucous membranes of the mouth are numerous varying-sized whitish placques or superficial ulcers. These lesions may be on the buccal mucosa, floor of the mouth, gingiva, the tongue, or even back on the tonsils. Accompanying the mucosal lesions there are always swollen red gums which bleed easily. (1) Gingivostomatitis is a self-limited disease with spontaneous healing in about two weeks. The virus of herpes simplex has often been isolated from the buccal lesions. It may be confused with "trench mouth" but is a much more frequent cause of acute stomatitis in children than is Vincent's infection.

Herpes simplex in adults is characterized by its recurrent nature. The infection is usually about the lips, but it occasionally recurs as a localized patch on the face, trunk, or extremities. When it appears on the trunk it is frequently confused with herpes zoster, but zoster, like chicken pox, practically never recurs.

The virus of herpes simplex may be grown on the scarified rabbit cornea and on embryonated hen's eggs, and seen by the electron microscope. In scrapings from the lining of vesicles and in fixed tissue section it is seen as an eosinophilic inclusion body in the nuclei of epithelial cells. It has been estimated that 75 per cent of all adults are infected with herpes simple virus. The lesions recur in susceptible individuals even though they have a high antibody titer against the virus in their blood.

Children and adults with atopic eczema occasionally develop a secondary infection with herpes simplex. This severe acute febrile disease with widespread umbilicated vesicles on the skin is known as Kaposi's varicelliform eruption or eczema herpeticum. A similar picture is produced when a patient with atopic eczema develops a secondary infection with the virus of vaccinia. To prevent eczema herpeticum, patients with infantile or atopic eczema should avoid contact with individuals with fever-blisters. For the prophylaxis of eczema vaccinatum these patients should not be vaccinated and should be guarded against those with active vaccinia.

Unfortunately, there is no prophylaxis for recurrent herpes simplex. In many individuals there is a "trigger action" which appears to light up this latent infection. Frequent predisposing factors are sunshine, a fever, eating chocolate, menstruation, and emotional conflict. Sometimes, with clever detective work, one can stop the recurrent herpetic infections by eliminating the "trigger action." It is stated in some texts that aphthous stomatitis is due to the virus of herpes simplex. However recent attempts to culture the virus from these lesions have been uniformly unsuccessful.

Herpes zoster and chicken pox are probably due to the same virus though opinion is not unanimous on this point. It is commonplace to see varicella occur in susceptible children following exposure to zoster. Also, complement-fixation experiments on convalescent sera from patients with these two dis-

---

*Assistant, Dermatology Division, Delaware Hospital.

LIBRARY OF THE
COLLEGE OF PHYSICIANS

cases show that they both give fixation with an antigen prepared from the zoster lesions. The histopathology of the skin lesions of herpes zoster is indistinguishable from that of varicella and herpes simplex.

Despite claims made by several pharmaceutical houses, there is no good evidence that any therapy is of value in herpes zoster. Antibiotics are often specific against the secondary infection which may be present, but no drug is specific for the virus infection. Zoster is a self-limited disease of about ten days duration and usually is so mild that no treatment is necessary. When the ophthalmic branch of N. V is involved, an ophthalmologist should be consulted to guard against the complication of glaucoma.

Post-zoster pain in the distribution of the affected nerve root, may be a real problem in older patients. Here too, the very multiplicity of therapeutic suggestions is good evidence of the lack of specificity of any one. Fortunately, after several weeks of sedation and analgesics, the pain usually disappears spontaneously.

Molluscum contagiosum is a not uncommon skin disease, most often occurring in children, characterized by a varying number of pea-size pearly-white papules. Often the lesion has a central umbilication. The virus etiology was first proved by crushing a molluscum lesion, passing the material through a filter which held back all cells and bacteria, injecting the filtrate into the skin of another patient, and producing a characteristic molluscum lesion. The virus has not been cultured but its presence is undoubted.

The lesions of molluscum contagiosum may usually be cured simply by pricking each with a needle. Even this treatment may be difficult in an apprehensive child with a multitude of lesions. There have been reports of cures by oral sulfonamides and antibiotics, but the many disappointments with these drugs suggest that the good results may have been merely a coincidence.

The virus etiology of warts has also been proved by inoculation experiments. Thus far, this virus also has not been cultured and has never been transmitted to animals. Warts may be classified as the common variety, flat juvenile type, plantar, and condyloma acuminata.

The common variety of warts, or verruca vulgaris, is best treated by dessication and curettage under procain anesthesia. The lesion may be destroyed even though the dessication is superficial enough to leave no scar. Radiation therapy is not indicated because a cancericidal dose must be given and this will often produce radiation dermatitis. Surgery must produce a scar and so is cosmetically objectionable. Strong "suggestion" may be of value if given with much conviction.

Flat juvenile warts are aptly described by their name. They are most common on the dorsum of the hands but may appear on the face. As they are the size of a small pea and have about the same color as the skin, they are rarely conspicuous and usually may be left untreated.

Plantar warts may be distinguished from calluses on the sole by paring off the keratinous surface and exposing the "black dots" or vascular tufts of the wart. The callus is simply hypertrophied keratin due to abnormal pressure on a small area and so does not show these "black dots". It is imperative to make a proper differential diagnosis between these lesions. The callus is treated by shoe adjustments to relieve the abnormal pressure. The plantar wart must be destroyed by keratolytics, dessication, or x-ray therapy.

Condyloma acuminata or venereal warts are moist vegetating lesions about the genitalia and anus. In this one type of wart there is a specific therapy in the use of podophyllin, best applied in 20 per cent concentration in 95 per cent alcohol. The podophyllin application should be limited sharply to the warts and washed off after above five hours to avoid local necrosis. One application usually results in a cure though several more at weekly intervals may be necessary. The podophyllin solution loses its potency after a few months so a reasonably fresh solution should be utilized.

The virus of lymphogranuloma venereum is pathogenic for many animals and embryonated eggs so laboratory investigation of this disease has been very fruitful. Clinically, the initial lesion is so insignificant that it is usually missed. The first obvious manifestation is inguinal adenitis which, if untreated, goes on to suppuration and drainage. In females the disease may cause rectal stricture and a fibrotic destructive process of the external genitalia called esthiomene.

Antigens for skin-testing, the Frei test, are prepared from the infected yolk-sac of an embryonated egg and are available commercially. It must be remembered that a positive Frei test merely shows that an individual has once been infected with lymphogranuloma venereum. Other causes for inguinal adenitis and rectal stricture must be ruled out before the Frei test is diagnostic. The complement-fixation test is more valuable than the skin test because it is diagnostic if a rise in antibody titer appears during the course of the disease. Sulfonamide therapy has proved highly effective in the treatment of the inflammatory phase of lymphogranuloma venereum, and apparently aureomycin and chloromphenicol are equally successful.

REFERENCES

1. Blank, Harvey: Virus Diseases Affecting the Skin, Acta Dermato-Venereologica, 29: 77-107, 1949.

CLINICOPATHOLOGIC CASE RECORD

Donald E. Kayhoe, M. D.*
Anne Dunbar Richman, M. D.
and
Park W. Huntington, Jr., M. D.
Wilmington, Del.

Presentation of Case**

Dr. Richman: Mrs. R. C., a 57-year-old white female was admitted to the Medical Service of the Delaware Hospital with an admission diagnosis of "hypoglycemic shock and anemia." She had apparently been well until 6 years before admission, at which time she suddenly lost consciousness. It was proved that the cause of her coma was hypoglycemia. Since then until admission to the Delaware Hospital, she had been hospitalized several times for attacks of unconsciousness and anemia. She ate large quantities of candies to combat hypoglycemia.

Past medical history: The patient was found to have achlorhydria seven years before. Studies at that time showed a blood sugar of 71 mg.%, hemoglobin 11.3 Gm. (70%), eosinophiles 3%, platelets 156,000, mean corpuscular volume 97 cubic micra, red cell fragility tests normal, icterus index less than 10 units, red cell count 3.59 million, white cell count 4,600, hematocrit 35%.

Several other counts during the following six years showed about the same amount of anemia. Urinalysis, one year prior to admission revealed no abnormality except for a trace of albumin and 50-60 white cells per high power field.

Two basal metabolic rates done six years and three years prior to admission were reported as minus seven and minus eleven respectively.

Supportive therapy had been given over the past few years of liver and hydrochloric acid with intravenous dextrose during her attacks of coma to which she responded well. The impression of her physician, who last saw her one year before admission, was that in addition to her organic pathology, she was "mentally retarded, emotionally blunted with little thought or concern regarding her condition. She became less and less cooperative as far as treatment was concerned."

Family history: Non-contributory.

Physical examination: Blood pressure left arm 160/80, right arm 140/80. The patient was an apathetic white female, unwilling to make an effort to answer questions and appearing somewhat younger than her stated age. Her hair was dark, plentiful and without graying. The skin was yellow tinged and curiously wrinkled. Eyebrows, axillary and pubic hair were absent. The pupils were equal, regular, and reacted to light. The sclerae and conjunctivae were clear and the extraocular movements normal. No abnormality of the mouth, pharynx, neck or chest was noted. The cardiac rate was 90 with frequent premature beats followed by a compensatory pause. A systolic murmur was heard at the third right interspace. The liver edge was six centimeters below the right costal margin in the mid-clavicular line and felt hard and nodular. No other masses were palpable in the abdomen. Except for her general apathy, the neurological examination was negative.

---

*Intern and Residents in Pathology, respectively, Delaware Hospital.

**Delaware Hospital Case Number 145294, presented at Staff Clinical Pathological Conference.

Laboratory data: On admission—red blood count 3.6 million; hemoglobin 12.3 Gm. (78%); white blood count 5,100; differential—polys seg 27, polys non-seg 10, lymphocytes 38, monocytes 7, eosinophiles 17, basophiles 1. Mean corpuscular hemoglobin concentration 32 micromicrograms. Repeat blood counts showed: hemoglobin 10.7 Gm. (68%), color index 0.94; hematocrit 33%; the red cells showed slight microcytosis and there were 13% eosinophiles. Blood sugars ranged from 30 mg.% to 138 mg.% depending on the state of glucose therapy. The blood urea nitrogen was 6 mg.%, the cholesterol 228 mgs, and the total protein 6.1 Gms. with an albumin globulin ratio of 3.0/3.1.

The first glucose tolerance test was as follows: fasting blood sugar 85 mg.%, ½ hour specimen 95 mg.%, 1 hour specimen 94 mg.%, 2 hour specimen 96 mg.%, 3 hour specimen 87 mg.%, 4 hour specimen 85 mg.%, 5 hour specimen 86 mg.%, and 6 hour specimen 88 mg.%.

A repeat glucose tolerance test was as follows: fasting blood sugar 65 mg.%, ½ hour specimen 110 mg.%, 1 hour specimen 60 mg.%, 2 hour specimen 60 mg.%, 3 hour specimen 55 mg.%, 4 hour specimen 58 mg.%, and 5 hour specimen 90 mg.%.

Urinalysis: specific gravity 1.015, reaction acid, albumin, sugar, and acetone negative, white cells 10-20 HPF.

Course in hospital: The patient was put on a high carbohydrate diet with intermittent feedings. She was given intravenous glucose solution daily. On the 9th hospital day, the patient began having "early morning dementia," being quite disoriented as to time, place and person. She responded well to orange juice but her dementia recurred if breakfast was omitted. In the morning of her 16th hospital day, she was found comatose. She vomited coffee ground material. The pupils were not dilated or constricted and reacted sluggishly to light. To and fro nystagmus from side to side was noted. The Babinski reflex was present bilaterally and there was bilateral sustained ankle clonus. No resistance to passive motion of the arms was present. She failed to respond to 50 cc. of 50% glucose intravenously. She was given intravenous digitoxin and intravenous glucose with saline and plasma without effect. She quietly expired 9 hours later.

Differential Diagnosis

Dr. Kayhoe: This case is essentially that of a middle aged female with anemia and hypoglycemia of six years duration. Apparently her disease was controlled with a high carbohydrate intake and liver therapy until one year before her demise when she began to show mental changes for the first time, and terminally she seemed to become refractory to glucose therapy with hypoglycemic episodes becoming more and more frequent, early morning dementia and neurological changes until finally she failed to respond to the previously effective intravenous glucose therapy and subsequently expired.

In considering the differential diagnosis, it would be valuable to have information about the patient: was she obese or cachectic, had she ever been pregnant, and in view of the enlarged nodular liver some sort of liver function tests would be helpful in making a diagnosis.

I believe that we can safely say that there was some disorder in carbohydrate metabolism that was the cause of this patient's death. At first, I was inclined to suspect a pancreatic tumor, possibly an adenoma with eventual malignant change which would explain the enlarged nodular liver, the yellow skin and the hypoglycemia. I am referring to an islet cell tumor when I speak of a pancreatic neoplasm. However, there are a number of findings which are present which are hard to explain with this diagnosis: the wrinkled skin, the anemia, dementia, and the alopecia.

I do not believe that pernicious anemia should be considered in this case. According to the blood counts reported, this patient had a microcytic hypochromic type of anemia. The yellowish skin could have been due to liver disease, and I believe that achlorhydria is not unusual in a normal patient of this age.

In the absence of primary pancreatic disease we must consider some of the other endocrine organs: the adrenal, the thyroid, or the pituitary gland. Since most of the findings in this case can be explained on the basis of pituitary insufficiency I believe that the patient's primary pathology could be found there with perhaps secondary changes in the other endocrine glands.

Simmonds' Disease as originally defined was a cachectic condition which arose in women, post partum, and usually associated with degenerative changes in the anterior lobe of the pituitary. Since then the terms "Simmonds' Disease" and "Simmonds' Cachexia", have been rather loosely applied to all cases of pituitary insufficiency. It was Sheehan who first described pituitary insufficiency without extreme weight loss and the acachectic form is now known as Sheehan's Disease or Syndrome. It has also been pointed out that this condition may arise in non-parous females, and in males and may be the result of adenomas of the pituitary; craniopharyngeal pouch cysts; primary and metastatic brain tumors; thrombosis, hemorrhage, or emboli to the pituitary vessels. Some cases with classic findings of pituitary insufficiency fail to show pathologic findings in the gland itself.

It might be well to list some of the changes found in anterior pituitary insufficiency which are present in this case. These patients have a waxy, pale skin which is soft and fine, but which may be coarse and myxadematous when the thyroid is involved. There is a sparce growth or absence of hair in the facial, axillary and pubic regions. These patients may have a microcytic type of anemia, with weakness, and may show mental changes. The glucose tolerance curve is usually flat, as it is in this case, and the patients may have episodes of hypoglycemia, especially early in the morning before breakfast. In contradistinction to this the glucose tolerance curve in islet cell tumors of the pancreas usually shows an initial rise after ingestion of carbohydrate followed by a fall below the fasting level as the presence of a high blood glucose stimulates the pancreas to overproduce insulin. Since the pituitary exerts an influence over the other ductless glands, one might expect findings suggestive of hypothyroidism or adrenal changes with an Addison's Disease—like picture, which in this case might explain the yellowish color to the skin. One might go on and hypothesize that the patient's eventual demise was due not to hypoglycemia but to hyponatremia, which would explain the terminal refractoriness to glucose therapy.

I do not believe on the basis of information available that it is possible to say just what the exact etiology of the pituitary failure was in this case, but I feel the most likely diagnosis is anterior pituitary insufficiency.

Pathological Discussion

Dr. Huntington: The important findings at autopsy were: On external examination of the body an almost total absence of hair was noted, especially in the axillary and pubic regions. The skin was pale and waxy. On internal examination, the heart showed thickening of the aortic and mitral valves. The liver showed thickening of the capsular surface; microscopic sections showed hemosiderosis. The spleen showed a fine perisplenitis. The pancreas was firm, slightly smaller than normal, and on miscroscopic section showed periductal fibrosis and islet hypoplasia. Both adrenal glands were extremely hypoplastic and showed medullary fibrosis. The uterus was of normal size. The myometrium was fibrous and the endometrium atrophic. Both ovaries were very atrophic. The thyroid gland was hypolastic. The brain was slightly smaller than normal and showed flattening of the sulci. The pituitary was located and found to be only one-third normal size. The anterior and posterior lobes could not be defined grossly and on microscopic section showed cystic hypolasia.

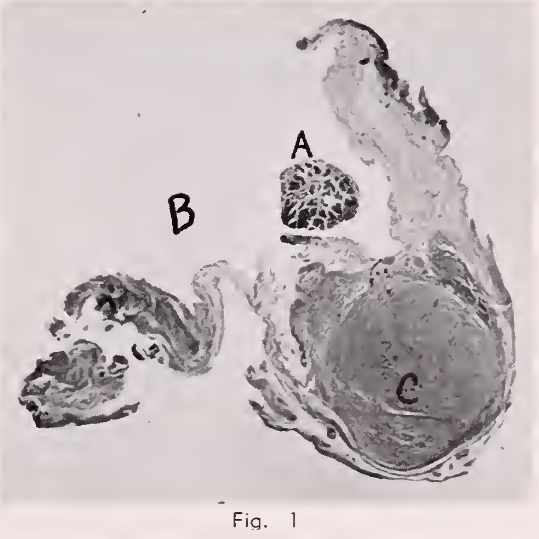


Fig. 1
a. Atrophic lobe of the anterior pituitary
b. Cystic cavity replacing anterior lobe
c. Posterior lobe of the pituitary

Pathological Diagnosis

Pituitary Cachexia (*Simmonds' Disease*)

GLAUCOMA — ITS PRESENT CONCEPT*

Alvin W. Howland, M. D.**
Philadelphia 3, Pa.

I should like to present for your consideration the most recent figures on causes of blindness which have been compiled by the Commission for the Blind for the State of Delaware.

The present series of 390 cases of blindness due to numerous causes reveals that of this number 95 were due to glaucoma; or 24.3% of the total. These represent the sad end results which are a matter of record. Many more cases are present throughout your State which are not included in the above tabulation, because the victims have only damaged vision. Thus glaucoma is a serious condition, which presents itself frequently in the offices of every practitioner of medicine.

Glaucoma is not a disease but a whole symptom complex which has as its common feature an abnormal elevation of the intraocular pressure. The former classification which most of us knew was:

1. Chronic Simple	(non congestive)
2. Acute Congestive	(incompensated)
3. Chronic Congestive	(incompensated)
4. Absolute	

Present day classification is:

A. Primary Glaucoma
(primary narrow angle)
B. Secondary Glaucoma
(primary wide angle)
C. Congenital Glaucoma

A. Primary Narrow Angle Glaucoma. All of the congestive cases, with a few exceptions, belong to the narrow chamber angle group.

If we may consider a large group of this type of cases as representing a single entity, the pathogenesis can be constructed. Histologic studies made shortly following an acute attack show edema and congestion of ciliary processes sufficient to push the iris root forward and obstruct the chamber angle. The causation of this vasomotor phenomenon rests on a theoretical base, which has not been clearly worked out as yet.

Diagnosis: Clinical course of most cases is one of recurring attacks of elevated tension, which vary in severity and frequency. During acute attacks there is edema of cornea with subjective symptoms of blurring of vision, halos around lights and rainbows. Severe headaches, ocular pain and nausea. Thus to the observant physicians a patient with the above should be considered as having glaucoma. Finger tension is a great aid in confirming the diagnosis. *Method*: The index fingers of each hand are placed gently side by side on the closed lid in position above the cornea, patient having been instructed to look downward. A gentle kneading motion of the index fingers gives an estimate of the intraocular tension. A comparison of the results obtained on each eye will give a fair estimate as to whether the ocular tension is higher in one eye than the other.

Observation will show the affected eye—

A. Cornea probably cloudy
B. Anterior chamber shallow
C. Congested globe
D. Pupil dilated

It is most advisable that this patient be given treatment immediately. The advice of an ophthalmologist is urged in order that as much vision may be conserved as possible, and the patient relieved of his discomfort.

Primary Wide Angle Glaucoma. In this group early recognition is more difficult. These cases will have a gradual loss of *vision*, of which the patient may become aware when it is far advanced, and found perhaps when the patient goes to have his lenses changed. At times the patient may be aware of transient attacks of blurring, which may cause him some concern, but symptoms (subjective) are not usually present.

The depth of the anterior chamber is not of much help in early diagnosis. Thus diagnosis of early wide glaucoma should rest with the man trained to watch for early changes.

1. Changes in optic nervehead, as cupping
2. Tonometer findings
3. Certain provocative tests (drinking test—higher rise in wide angle)
4. Perimetric findings (changes in blind spots)

B. Secondary Glaucoma. The eye of man may be subject to an increase in pressure which can be caused by numerous pathological conditions or disease. When the initial cause is known, the condition is called secondary glaucoma. Some common causes are as follows:

---

*Read before the Medical Society of Delaware, Dover, October 4, 1950.

**Associate in Ophthalmology, University of Pennsylvania Graduate School of Medicine.

1. Subsequent to a severe iritis, iridocyclitis
2. Lens changes—as swelling from rapid cataract formation—changes in position
3. Intraocular tumors or space taking lesions
4. Hemorrhagic glaucoma—following occlusion central retinal artery.

Clinically, secondary glaucoma closely resembles the primary condition which produces it. Thus, during any acute ocular inflammation a careful check should be kept on the intraocular pressure. If a rise in tension is noted, immediate attention should be given to reduce it.

Subjectively, with increase in pressure the affected eye may become more painful and vision may be more markedly impaired.

Treatment: Intensive treatment of any acute inflammatory disease. If this is not successful, opening of the anterior chamber by surgical means, and repeated if necessary. Basal iridectomy may be required in some cases. The emptying of the anterior chamber of debris in traumatic conditions, either of lens material or hemorrhage.

C. Congenital Glaucoma or **Buphthalmos.** The eyeball in an infant, due to structural abnormalities in the angle of the anterior chamber, and a resulting increase in intraocular tension, may be markedly enlarged. The coats of the eye stretch under the abnormal pressure. Examination reveals:

A. Enlargement of the globe
B. Thinning of sclera—bluish in color
C. Deep anterior chamber
D. Cloudiness of cornea
E. Atrophy of iris

When this stage is reached, there is marked loss of vision which does not return as a rule. If the condition is recognized in early stages, the most advanced treatment is goniotomy, which is the stripping or peeling of embryonic tissue from the angle wall. In one series of 76 cases in a period of 10 years the pressure normalized in 66 cases. Previously, medical treatment or surgical treatment gave very little help in these cases.

Treatment—*Narrow Angle Glaucoma.* Medical treatment may be undertaken by any of the following: During acute attack every attempt should be made to reduce tension as soon as possible. If not controlled in 12 to 18 hours, surgery is essential. If tension decreases, the congested eye should be allowed to quiet and surgery done, especially if patient is under 60 years of age, as recurrent attacks usually occur.

Pilocarpine and eserine are most familiar to all of you. More recently synergistic combinations bring better results, as prostigmin 5% and mecholyl 20%, or prostigmin 5%, or eserine ¼-½%, with 2% pilocarpine, or 1.5 doryl. These substances can be alternated every 15 minutes for 2 hours, then hourly thereafter.

Intravenous sorbital, a complex alcohol, reduces tension as early as 2 hours after administration. Dosage 100 cc of 50% solution. Morphine given for pain and to allay restlessness and apprehension.

Treatment—*Wide Angle Glaucoma.* The wide angle type glaucoma responds less well to treatment, either medical or surgical, than does narrow angle glaucoma, if both are submitted to therapy while the disease is still in its early stages. Medical treatment should be given an adequate time. However, the results from surgery are best when it is performed early in the course of the disease, after a diagnosis has been established by a careful study of:

1. Visual fields
2. Ocular tension—elevated
3. Unintelligent or uncooperative patient—does not use drugs as directed
4. Geographic location—adequate follow-up impossible

Patient is placed on weakest miotic, instilled as infrequently as possible, which keeps intraocular tension at a safe level. Miotics available to treat wide angle glaucoma are:

A. Pilocarpine ¼% to 2%

B. Eserine ¼% combined with Pilocarpine excellent. Long use may cause allergies ½ to 1% commonly used, however.

C. Prostigmin Mecholyl 5%—best in combination not frequently used except with Prostigmin and in 20% strength.

E. Doryl Carcholin—1.5% commercial preparation. .75% and 1.5% combined with Zephiran.

F. D.F.P. (di iso propyl flourophosphate) probably strongest miotic. Used .035% to .1% solutions.

The use of dibenamine (N. N. dibenzyl-B chloroethylamine hydrochloride) has been tried in acute congestive or narrow angle type cases in secondary glaucoma, and also in chronic simple or wide angle glaucoma. Administered intravenously by slow drip. There may be marked systemic effects, (miosis, nausea and vertigo, mild confusion, pain along the vein). This drug reduces tension in certain cases within 6 hours of administration —lasts 24 to 28 hours.

Surgery—*Narrow Angle.* If eye controlled within 12 hours—should be allowed to become quiescent—basal iridectomy if does not respond—filtering operation sometimes—Post sclerotomy may also be used.

Surgery—*Narrow Angle.* Many types of operations which are advocated. No single type answers all needs.

1. Cyclodialysis
2. Iridencleisis
3. Trephining

These procedures attempt to re-establish drainage between the anterior and posterior chambers of the eyeball.

I hope this brief review of the present day concept of the various types of glaucoma and its treatment, will bring to you the importance and the necessity of its early recognition and treatment.

255 S. 17th Street

Discussion

Dr. J. E. Marvil (Milford): I am very sorry that Dr. Howland's slides could not be projected because of technical difficulties. I am sure that he would have been able to give us a lot more information in addition to the already excellent paper that he presented.

There isn't very much that I can add to his paper; I think he covered the subject in a very excellent manner.

I do have some notes of a few things that I have noticed about glaucoma. One particular thing is in acute glaucoma, the congested type that Dr. Howland spoke of, that sometimes the pain is so severe that a diagnosis of an eye condition is overlooked. I have seen one or two patients where the diagnosis was acute congestive glaucoma, but the diagnosis made at the time was acute gall bladder. The patient vomited a great deal, and it was three or four days later when the diagnosis of an eye condition was made, and as a result in two cases I know the patient lost practically all of his vision because of delayed operations. I am sure that all the eye men have seen similar cases.

I also want to ask Dr. Howland if he has had any experience with the effect of caffeine. He mentioned about the caffeine test for the diagnosis of glaucoma. Last year, at the meeting in Chicago of the Academy of Ophthalmology and Otolaryngology, Dr. Campion, who has a clinic in San Francisco, with some other men, told me that they have found that by the simple regulation of caffeine in patients, in many cases they are able to completely regulate the chronic cases of glaucoma and avoid surgery and other medication.

I have tried to find in the literature if there are any references to that, and there are only two or three cases. Dr. Sugar, in the American Journal of Ophthalmology, October 1948, has a few references to it, and there is also a publication on glaucoma by the National Society for the Prevention of Blindness, which mentions that.

Those are the only references that I have been able to find. But I have found in my practice that if I take patients away from coffee and tea, many of them get along much better than they did before.

Dr. W. O. LaMotte, Jr., (Wilmington): First of all, I would like to apologize for any part I had in blowing up that bulb, but I have fixed the machine so that it can't blow out another bulb until they fix that wire.

In addition, I would like to thank Dr. Howland for coming down here and giving us so ably his conception of the present classification and diagnosis and treatment of glaucoma. I feel this is important material to present before the general medical profession, if only from the point of view of preventive medicine. I think that that is a good excuse, on that basis alone, for having such a presentation at a meeting such as this.

I believe the last paper before this Society on glaucoma was in 1942, at which time my father read a paper on the subject, and he said at that time that one of the four chief reasons why very often there is a delay in the diagnosis of glaucoma is that the general practitioner and family physician is often not as cognizant of this disease as he should be. I hope that all of us are sensitized now for another eight or ten years so that we will constantly keep before us the challenge of early recognition of this disease.

I would like also to remark upon the present division of primary glaucoma into the narrow angle and wide angle types, which is a very practical division from the point of view of very practical clinical grounds. However, we all know that the chamber angle can be completely closed and still the tension normal, and we know that the eye can be congested and hypertensive and the chamber angle wide open. Likewise, we know that glaucoma operations can fail even though the chamber angle is wide open, and can succeed when it is completely closed.

So it becomes obvious that there are many other factors than the mechanical ones in the genesis of glaucoma, and I would simply like to say that the factors of heredity, emotional life of the patient, the endocrine system, the neurovascular mechanism, and many other factors enter into the picture.

Therefore, I believe that there are two compelling reasons why the family physician should make it his business to interest himself in glaucoma:

1. The responsibility of early recognition, and

2. The challenge of treatment of the whole patient as the only complete approach to the proper therapy of glaucoma, an approach which only the family physician is really equipped to offer.

I will say no more except perhaps to ask Dr. Howland one question, if he cares to answer it. We heard a great deal today about the general adaptation syndrome, use of ACTH and cortisone. Is there any evidence of any favorable effect in the treatment of glaucoma with these therapeutic agents?

Dr. Howland: I will try and answer these questions very briefly.

First of all, I will say that the slides were prepared under the direction of the Society for the Prevention of Blindness, and they are colored and diagrammatic to bring more ably to you these things of which I spoke. I am very sorry you couldn't see them.

In answer to Dr. Marvil's question about the use of caffeine, there is no evaluation of all types of tests. It appeared in the American Journal of Ophthalmology, I believe, in July 1947. It was written by S. Bloomfield and L. Kellerman. In their paper they evaluate all types of glaucoma tests. The caffeine test was passed over very rapidly. They did not get consistent results. The drinking test, the pressor test, and seating the patient in a dark room, were the tests that gave them the most accurate results.

I shall be glad to send you that reference, if you like, Dr. Marvil.

In answer to your question, Dr. LaMotte, I have not had any experience with ACTH in glaucoma. To my knowledge, in Philadelphia, no work has been done in glaucoma with ACTH. There may be some going on at the University which I do not know about. We are using Cortisone at the Wills, experimentally, in other types of inflammatory eye conditions. It is given by instillation, subconjunctivally.

DIMETHYLANE IN THE TREATMENT OF DYSMENORRHEA

George J. Boines, M.D.
Wilmington, Del.,
and
Steven Horoschak, B.S.,
Ridley Park, Pa.

This report represents a study of 19 cases of primary dysmenorrhea treated with a compound 2-2 diisopropyl-4 methanol-1,3 dioxolane (dimethylane*). Thirteen patients reported excellent results; 3 patients did not feel any better compared to previous therapy; two patients felt worse and one patient could not tolerate the drug.

---

*Dimethylane supplied by Medical Research Department, National Drug Co., Philadelphia.

Dysmenorrhea or painful menstruation is a major medical problem in the female population of this country. It has been estimated[1] that one third of all young women of America suffer from the condition, and that 140 million working hours are lost annually as the result of dysmenorrhea.[2]

The absence of pelvic pathology and the role of factors intrinsic to the uterus identify the dysmenorrhea as primary, essential or intrinsic. On the other hand, when pelvic pathology is demonstrable and is found to be the direct cause of the symptoms, the dysmenorrhea is secondary or acquired.[3] We will concern ourselves with the primary or essential type in this study.

The etiology of dysmenorrhea is still an academic problem as evidenced by the plethora of causes advanced as responsible for the production of painful menstruation. Despite the expanding knowledge of endocrinology, there is no conclusive evidence to correlate hormonal secretions with this syndrome. It has been suggested[4] that dysmenorrhea is the result of an imbalance which occurs between estrogen and progesterone, however, this has not been fully established as a clinical fact.

Primary dysmenorrhea, according to Witherspoon[5] "can be explained by the withdrawal of the progesterone influence and the increasing uterine stimulation by the estrogenic principle, which results in whipping into marked activity a uterus which has been lying in a quiescent state for ten days or two weeks." This investigator further indicates that the very nature of the pain suggests spasmodic contraction of the uterine muscle as the immediate cause.

Novak and Reynolds[6] believe that the development of excessive contractility of the uterus coincides with the withdrawal of the corpus luteum effect at the onset of the menses.

In the opinion of Bickers[7] there is no sound scientific evidence to show that primary dysmenorrhea is the result of any hormonal deficiency. To quote: "Although the endocrinologic aspect of dysmenorrhea is worthy of consideration, there is not one piece of confirmed scientific evidence to show that the endocrine status of dysmenorrhea is different from that of normal women."

The association of menstrual pain and spasmodic contractions of the uterus has been proposed by Bickers.[8] This investigator believes[7] that the pathologic physiology of primary dysmenorrhea is muscular contraction in the presence of anoxia.

We subscribe to the concept that contractions of the uterus produce a deficient blood supply resulting in ischemia and congestion terminating in menstrual pain. Novak[3] suggested that the inhibition of uterine musculature is a rational point in the approach to the therapy of primary dysmenorrhea.

The symptoms of dysmenorrhea vary from patient to patient. In a typical case according to Curtis[9] the spasmodic cramps resemble, in miniature, the pains of labor. The symptoms may range from a mild mental and physical discomfort to severe attacks of pain involving the patient's back, legs, and lower abdomen, which invariably leave her in a state of great fatigue during the early part of the intermenstrual period. Headache, nausea and vomiting are frequent complications and should receive medical attention.

Menstrual pain usually begins 12 to 24 hours before the period; however, in some cases symptoms may arise several days before, and in others not until the flow has actually started. Initially, the flow tends to be very scanty in a majority of the patients.

Favorable experiences reported by Boines[10] with 2,2 diisopropyl-4-methanol-1,3 dioxolane (dimethylane) in the management of anxiety tension states in menopause prompted us to try this compound in the treatment of primary dysmenorrhea.

Myanesin and certain other simple monoethers of gylcerol were found by Berger and Bradley[11] to produce transient paralysis of voluntary skeletal muscles without embarrassing respiration, and that, in smaller doses, they had the capacity to control various types of tremors and other involuntary movements as well as a relaxing effect on spasm, spasticity and rigidity. Henneman and associates[12] reported that myanesin had a sedative or tranquillizing general effect, and that the site of its action is in the internuncial cell.

The therapeutic characteristics described for myanesin are also present in a series of compounds, 2-substituted-4-hydoxymethyl 1,3-

dioxolane, and according to Berger et al[13] 2-2 diisopropyl-4-methanol-1,3, dioxolane (dimethylane) possessed a greater margin of safety and activity than myanesin.

Materials and Procedures:

Nineteen female patients ranging in ages from 18 to 32 years with complaints indicative of primary dysmenorrhea were selected for this study.

A complete history was obtained from each patient and thorough physical examinations were made to exclude the presence of any pathology in the pelvis, genital organs as well as the breasts. Complete blood counts were made at regular intervals.

The duration of time the patients had been under our observation and care prior to this study was as follows: 5 patients for 3 to 6 months; 7 patients for 6 to 9 months; 7 patients for 9 to 12 months.

Previous treatment consisted of:

1. Bed rest for at least 24 hours, in all cases at time of onset of the period. In the more severe cases 48 hours bed rest was prescribed.

2. Attention to diet and bowel function was impressed on the patient as being very essential.

We prescribed vitamin B complex, vitamin C, and iron preparations whenever indicated.

3. Codeine sulfate ¼ gr. every 3 hours until relieved was used in 4 cases.

4. Acetylsalicylic acid in 5 grain doses every 3 or 4 hours, or a combination of acetyl sal, phenacetin and caffeine citrate were used in 12 patients. We also prescribed oral conjugated estrogens in many of these cases.

5. In three cases we used atropine and phenobarbitol as well as conjugated estrogens orally.

In all cases medication was prescribed to be taken at least 24 hours, preferably 48 hours before the anticipated onset of menstrual pains.

The best that was accomplished with the above procedures was a possible modification of the pain with no apparent effect on the "cramps" and backache in a large portion of the cases, nor did the menstrual flow seem to be influenced.

In transferring these patients to dimethylane treatment we set up the following regimen:

1. Bed rest for at least 24 hours when period had started.

2. Attention to diet and proper bowel function at all times.

Vitamins and iron preparations were prescribed whenever indicated.

3. Elimination of all other medication.

4. Dimethylane (0.25 gm. capsule), one to two capsules after meals and at bedtime at least 24 hours before anticipated onset of pains, and continued through the period.

Results:

The patients had been on dimethylane treatment through 4 menstrual periods with the following observations:

1. Of the 4 patients who had required codeine to obtain relief, 2 reported excellent results; 1 patient reported she felt worse, and 1 reported she could not take the capsule. We had prescribed 2 capsules after meals and at bedtime to this group, and although we reduced the dose in the fourth patient, she refused to continue on dimethylane.

2. Of the 12 patients previously treated with analgesics and conjugated estrogens, 9 reported excellent results with dimethylane; 2 noted no difference, and 1 stated she felt worse. The latter three patients complained of gastric distress, but it was not severe enough to cause interruption of treatment.

3. Of the 3 patients previously treated with atropine, phenobarbital and oral conjugated estrogens, 2 reported excellent results on dimethylane, and one patient noted no difference.

The 13 patients who reported excellent results stated that their "cramps" were milder compared to those suffered during previous treatments; backache was either absent or moderate and the flow appeared to be uniform throughout the period. The dimethylane produced no toxic effects in any of the patients.

Summary:

1. A series of 19 cases of primary dysmenorrhea was treated with a muscle-relaxing compound 2,2 diisopropyl-4-methanol-1,3 dioxolane (dimethylane) as an adjunct to bed rest, diet, and attention to bowel function.

2. Excellent results were reported by 13 patients. "Cramps" were milder, backache

was either absent or moderate, and the flow seemed to be more uniform throughout the period.

3. Three patients stated they noticed no difference with dimethylane treatment compared to previous therapeutic regimen.

4. Two patients reported that they felt worse and requested they be placed on former treatment.

5. One patient insisted she could not take dimethylane, although she was benefitted.

Comment

Based on our experiences in a small series of primary dysmenorrhea cases treated with dimethylane as an adjunct in the medical management of this syndrome, we suggest that this drug deserves favorable consideration as an addition to the physician's therapeutic armamentarium for the control of menstrual pain which incapacitates such a large portion of the female population.

REFERENCES

1. Haman, J. O.: Exercise in Dysmenorrhea, Amer. J. Obs. & Gyn. 49: 755 (June) 1945.
2. Torpin, R., Woodbury, R. A., and Child, G.P.: Nature of Dysmenorrhea, Amer. J. Obs. & Gyn. 54: 766 (Nov.) 1947.
3. Novak, E.: Textbook of Gynecology, 3rd Ed., 1948. Baltimore: Williams and Wilkins Co.
4. Greenblatt, R.B.: Office Endocrinology, 3rd Ed., 1947. Springfield, Ill.: Chas. C. Thomas.
5. Witherspoon, J. T.: Clinical Pathological Gynecology, 1939. Philadelphia: Lea and Febiger.
6. Novak, E. and Reynolds, S.R.M.: Cause of Primary Dysmenorrhea with Special Reference to Hormonal Factors, J.A.M.A. 99: 1466 (Oct. 29) 1932.
7. Bickers, W.: Primary Dysmenorrhea, South. Med. J., 36: 192 (Mar.) 1943.
8. Bickers, W.: Uterine Contractions in Dysmenorrhea, Amer. J. Obs. & Gyn. 42: 1023 (Dec.) 1941.
9. Curtis, A. H.: Textbook of Gynecology, 5th Ed. 1939. Philadelphia: W. B. Saunders Co.
10. Boines, G. J.: The Use of Dimethylyn in the Management of Certain Symptoms of Menopause, Del. St. Med. J. 23: 41 (Feb.) 1951.
11. Berger, F. M., and Bradley, W.: The Pharmacological Properties of B-dihydroxy-(2 methyl-phenoxy) propane, (Myanesin), Brit. J. Pharm. 1: 265. (Dec.) 1946.
12. Henneman, E., Kaplan, A. and Unna, K.: A Neuropharmacological Study on the Effect of Myanesin on Motor Systems., J. Pharm. and Exp. Therap., 97: 331 (Nov.) 1949.
13. Berger, F. M., Boekelheide, V. and Tarbell, D.S.: The Pharmacological Properties of Some 2-substituted-4-hydroxy methyl-1,3 dioxolane Science: 108: 561 (Nov.) 1948.

GLASS ON X-RAY FILM

The current (July) issue of the *American Journal of Roentgenology and Radium Therapy* reports on a study to determine how many and what kinds of glass could be demonstrated on an x-ray film. The study, undertaken because the x-ray demonstration of glass as a foreign body in the eye has always been one of the most difficult problems confronting the radiologist, was made by Wendell E. Roberts, Sc.D., of the Department of Roentgenology, Charlotte Eye, Ear and Throat Hospital, Charlotte, North Carolina, and was undertaken because glass is involved in so many accidents.

Not all glass is sufficiently opaque or impervious to light to cast a shadow, the article said, adding: "However, many more kinds are radiopaque than are universally thought to be."

"Industrial ornamental glass presents a hazard to the workmen during installation. Fragments of automobile glass and eye glasses may be encountered in accident cases. Frequently the question of the presence of fragments of glass bottles of various kinds is encountered, as a result of explosions or fights. Many of these cases present themselves for compensation or damages. The accurate demonstration of such foreign bodies on x-ray films is extremely important to the ophthalmologist."

If glass foreign bodies can be seen on the film, but cannot be removed, this fact is important to the attending surgeon. Then, too, if it is proved that no glass foreign body is present inside the eye, repair of the injured eye may give the patient some hope of residual useful vision.

Many different glass samples were obtained for the study. One interesting fact was that bifocal lenses were extremely opaque to the x-rays.

"Since there is no difference in the efficiency of the various types of lenses, it would appear that anyone, especially those in hazardous occupations, should wear the most opaque lens. If the most opaque lenses were a requirement, an accident case would be far more certain to get an accurate opinion from the x-ray department, and, as a result, far more accurate advice from the ophthalmologist."

+ Editorials +

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building
Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place
M. A. Tarumianz, M. D. .... Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 23 July, 1951 No. 7

Delaware Academy of General Practice

In the last three issues of The Journal there appeared an advertisement for a course in electrocardiographic interpretation offered by the Delaware Academy of General Practice. This course is an ambitious undertaking of Delaware's newest medical organization. It was only in September 1950 that a group of five local general practitioners met and organized the Delaware Academy of General Practice. These physicians, who were members at large of the American Academy of General Practice, were so impressed with the aims of the parent Academy that they took it upon themselves to act as missionaries to the general practitioners of Delaware.

Since that day the Delaware Academy of General Practice has grown and become active in the scientific field of Delaware medicine. Breakfast meetings were held on Sunday mornings and speakers, outstanding in their fields, were obtained who delivered papers which emphasized the role of the general practitioner in each of the specialties. Dr. Joseph Hughes, Professor of Psychiatry at the Womens Medical College of Philadelphia; Dr. William Likoff, Associate Professor of Cardiology at the Hahnemann Medical College of Philadelphia; Dr. Irvin Klein, cardiologist with the New York State Compensation Commission; and Dr. John Daugherty, of the Pennsylvania Blue Cross and Blue Shield were among the speakers.

At the April meeting the membership was polled as to the advisibility of underwriting a formal course of training for the physicians of Delaware. The Cardiology Department of the Hahnemann Medical College of Philadelphia, under the direction of Dr. George D. Geckeler, consented to give a course in electrocardiographic interpretation.

To the best of our knowledge, this is the first time that a medical school department has given a full time post-graduate course in Delaware for the benefit of Delaware physicians. The course is approved by the American Academy of General Practice for twenty-four hours of formal training credit and is listed in the approved post-graduate courses by the *Journal of the American Medical Association*. Delaware physicians should take pride in the precedent thus established.

The Delaware Academy of General Practice is a constituent chapter of the American Academy of General Practice which was organized about four years ago to establish an organization of general practitioners to promote and maintain high standards of the general practice of medicine and surgery; to encourage and assist young men and women in preparing, qualifying and establishing themselves in general practice; to preserve the right of the general practitioner to engage in medical and surgical procedures for which he is qualified by training and experience; to assist in providing post-graduate study courses for general practitioners, and to encourage and assist practicing physicians to participate in such training; to promote the science and art of medicine and surgery and the betterment of the public health; and to preserve the right of free choice of physician to the patient. Eligibility for membership requires the applicant to have at least one year of a rotating internship, and to have been in practice for at least three years. In order to remain a member the physician must complete a minimum of 150 hours of post-graduate study in a three year period. This tends to raise the educational standards of the general practitioners well above any previous standards. The younger practitioner may apply for associate membership until such time as he may become eligible for full membership.

The American Academy of General Practice at the present time is almost 16,500 members strong and is fast becoming one of the largest groups of physicians in the country.

We wish to congratulate the Delaware Academy of General Practice and its officers for the excellent manner in which they are deporting themselves and thank them for providing the physicians of Delaware with the highest type of post-graduate training. It is our belief that by offering the physicians of the state and particularly the general practitioners the opportunity to avail themselves of top notch medical school training, the Delaware Academy of General Practice is to be commended.

The officers for 1951 are: President, Harold A. Tarrant, Wilmington; Vice President, J. Jesse Selinkoff, Elsmere; Secretary, H. Thomas McGuire, New Castle; Treasurer, Harry Taylor, Wilmington.

USO ANNIVERSARY

In July 1948 the USO was recalled to peacetime duty at request of the President, and Secretary of Defense. Since Korea, the member agencies of USO have expanded their services as fast as they could to meet the dramatically increased needs. Today there are more than 100 going operations with many more planned. The Community Chests of the country are accepting the responsibility of raising funds for this type of service, as they did during World War II.

MEDICAL SOCIETY OF DELAWARE BY-LAWS PROPOSED AMENDMENTS

The following Amendments are proposed to the booklet of By-Laws of the Medical Society of Delaware, and are published in this issue of The Journal in order to give the members the required two months notice before action is taken in October.

Item I

Page 10, Line 6 and Line 16, Article III, Section 6—Dues and Assessments. Change "April 1" to "April 30."

Item II

Page 18, Line 19, Article IV, Section 9—Transfers. Change "one year" to "six months." Section 10, Bottom Line—Transfer Cards. Change "twelve months to "six months."

Item III

Page 10, New Amendment to Article III. Section 6—Dues and Assessments. Active members of this Society shall be excused from payment of annual dues and special assessments of this Society as long as they are on active duty with the Armed Forces of the United States. Said members shall pay the dues for the year in which they are inducted into service, but shall not pay the dues for the year in which they are mustered out.

Item IV

Page 10, New Amendment to Article III, Section 6—Dues and Assessments. Active members of this Society who retire from practice before the age of seventy and who derive no part of their income from the clinical practice of medicine shall be excused from the payment of annual dues or special assessments of this Society, provided they are similarly excused from the payment of dues and assessments of their component county society, and provided further that they shall file with the Secretary of this Society, on a form to be provided by said Secretary, an affidavit to that affect.

BOOK REVIEWS

'Principles of Internal Medicine' Tinsley R. Harrison, M.D., Professor of Medicine, University of Texas, Editor in Chief. pp. 1590, with 245 illustrations. Cloth. Price, $12.00. The Blakiston Company, Philadelphia, 1950.

This represents a new approach in a textbook in internal medicine. There is a noteworthy attempt to summarize the known chemical, physiological, and psychological bases for disease, as well as its management. The 53 contributors are active medical teachers and investigators who write from experience. The arrangement of the book is such that one must read two or more sections in order to get the total information offered on a given subject; e.g., a section on alterations of weight and a chapter on obesity are separated by some 250 pages because of the organizational arrangement of the book.

The major divisions of the text are: I. Cardinal Manifestations of Disease; II. Physiologic Considerations; III. Reactions to Stress and to Antigenic Substances; IV. Metabolic and Endocrine Disorders; V. Disorders Due to Chemical and Physical Agents; VI. Diseases Due to Biologic Agents; and VII. Diseases of Organ Systems.

There is an attempt to supply pertinent information and to distinguish between trivia and essentials. For example, under pneumococcal infections it is pointed out that the time-honored clinical distinction between lobar and bronchopneumonia is of little moment. The etiologic agent is far more important than the anatomic distribution of the pneumonia.

The increasing interest in disorders due to chemical and physical agents is attested by a division devoted thereto in this text. As a reference source for one interested in occupational diseases, this section is inadequate, yet it represents a praiseworthy attempt to present something of the more important noxious agents.

In this single volume one can find an amazing amount of information in a condensed form. Examples are the sections on fluid and electrolyte balance, the metabolic pathways followed by carbohydrates and other foodstuff, electrophysiology, allergy and immune mechanisms, hormones and hormonal disturbances, cardiovascular disorders and the hemopoietic system. This text can be read with pleasure and profit by anyone interested in internal medicine.

Textbook of Endocrinology. Edited by Robert H. Williams, M.D., Professor of Medicine, University of Washington Medical School, Seattle. With the collaboration of: Peter H. Forsham, Harry B. Friedgood, John Eager Howard, Edwin J. Kepler, William Locke, L. Harry Newburgh, Edward C. Reifenstein, Jr., William W. Scott, George Van S. Smith, George W. Thorn, Lawson Wilkins. pp. 793, with 168 figures. Cloth. Price, $10.00. Philadelphia: W. B. Sanders Company, 1951.

The editor has eleven collaborators, selected for their research and clinical experience in endocrinology. An important and useful aspect of this textbook is the good summary of the physiology and chemistry of endocrine glands. There are excellent colored photographs and photomicrographs illustrating the appearance of patients and histology of glands in various disease states.

The approach is a critical one. There is, for example, a clear distinction made between the clinical signs from excess thyrotropin and those from increased thyroid hormone. There are good summaries of results of various forms of treatment in disorders of the endocrine glands.

Also, this volume covers essential aspects of clinical interest too often not found in a textbook on endocrinology. Examples are a discussion of infertility in the male, and figures on life expectancy for diabetics under modern management. One section reviews the influence of glands upon growth and development. The reviewer considers the chapter on Psychodynamic Aspects of the Endocrinopathies an outstanding contribution to good treatment of patients with disorders of glands of internal secretion.

A Textbook of Gynecology. By Arthur Hale Curtis, M.D., Emeritus Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School, and John William Huffman, M.D., Associate Professor of Obstetrics and Gynecology, Northwestern University Medical School. Sixth edition. pp. 799. Cloth. Price, $10.00. Philadelphia: W. B. Saunders Company, 1951.

Here is a sixth and new edition of this standard and well accepted text on the subject. It is sound and well organized and, as is usual with Curtis, starts with the traditional and superior chapter on anatomy.

The subject matter is carefully and completely presented, not as a dictum from an authority whose word can not be questioned, but rather by practitioners of long standing, governed by their common sense and experiences over the years.

Concerning the question of total versus supra-vaginal hysterectomy, one statement in the text, page 282, might be questioned: "It is probable that most cancers which develop in cervical stumps are already present at the time of supra-vaginal hysterectomy either as hidden endocervical growths or as slowly growing very early lesions of the external cervix."

On the whole, this reviewer feels that a 'Textbook Of Gynecology' by Curtis and Huffman can be read with profit by any one interested in the subject.

Diabetes Mellitus: Principles and Treatment. By Garfield G. Duncan, M.D. pp. 289, illustrated, Cloth. Price, $5.75. Philadelphia: W. B. Saunders Company, 1951.

Diabetes mellitus has become a very important problem for the medical profession and the lay public. The widespread publicity given to the importance of finding the "Million Hidden Diabetics" has alerted all of us to make more routine blood and urine examinations. The author, with the assistance of four collaborators, goes into great detail in presenting the diabetic problem and it's systematic control. The reader will find a thorough discussion of the present day concepts of the disturbed physiology encountered in this disease. The complete understanding of the physiology, physiological chemistry, pathology, and nutrition are prerequisites in the clinical evaluation and management of this metabolic disturbance.

The book is divided into nineteen chapters covering all the phases of diabetes. Of unusual interest and practical value are the chapters on Insulin, Diabetic Coma, Pregnancy Complicating Diabetes, and The Diabetic Child. References are given at the end of each chapter.

Physicians will find this book a very useful guide in the intelligent understanding and management of the diabetic patient. Medical students will also find this a complete text book on this subject.

Handbook of Pediatric Medical Emergencies. By Adolph G. DeSanctis, M.D. and Charles Varga, M.D. pp. 284 with 51 illustrations. Cloth. Price, $5.00. St. Louis: The C. V. Mosby Company, 1951.

Handbooks are appearing in every specialty. This handbook gives an outline of emergencies encountered in children; the treatment is in outline form so that it is necessary for the doctor to have previous experience in the treatment outlined. An example in point is the suggestion on page 48, for using curare in the treatment of tetanus. The dose of 0.5 to 0.75 c.c. of intocostrin (Squibb) intravenously, is suggested to be given over a 2-minute period. Actually the dose should be regulated according to the weight of the patient, because 10 to 15 units given to a small child intravenously will probably cause respiratory paralysis. If this happens, artificial respiration and oxygen together with prostigmine, will be necessary to antagonize the action of the curare. The same is true of the suggestion for the intramuscular use of crystacillin d-tubocurarine chloride in wax and oil (Squibb). An experienced anesthetist or one experienced in using the drug in spastic neuromuscular conditions should be asked to handle the curare part of the treatment.

Treatment of respiratory paralysis in poliomyelitis could have been made of more practical value.

The most valuable parts of the book are the illustrations of the various pediatric procedures associated with artificial respiration, restraint of patients, vein punctures, paracentesis of the various cavities, methods of administering oxygen, and many others.

The tables of the Commercial Sources of Poisons, Poisons Generally Found in Household Articles, Useful Conversion Methods, and Normal Physical and Chemical Constants, are of value. References are given at the end of each chapter.

Principles and Practice of Surgery. By Jacob K. Berman, M.D. pp. 1378, with 429 illustrations. Cloth. Price $15.00. St. Louis: C. V. Mosby Company, 1950.

This is an unusually well illustrated book for the up-to-date surgeon. However, the most interesting section is that which deals with the basic sciences as they are applied to the clinical practice of medicine and their correlation with the fundamental principles of surgery. The author very cleverly reminds the young surgeon, as well as the older one, that applied physiology and biochemistry must be added to his knowledge of embryology, anatomy, and pathology before he can formulate sound clinical judgment in etiology, diagnosis, prognosis, and treatment.

The book is divided into five parts: Part I deals with Historical Information and Pathological Findings; Parts II and III—Local Response and General Body Reactions to Injury; Part IV—Tumors and Cysts, and Part V—Diseases and Injuries of Specific Organs and Systems.

The chapters on Body Fluids, Acid-Base Balance, Hemmorhage, Shock, and Glands—Exocrine and Endocrine, are excellent examples of the concise and easily understandable manner in which the basic sciences are correlated and translated into the practical interpretations of what is happening in the surgical patient.

Complete lists of applicable references are given at the end of each chapter.

This book will be found very useful by every student of surgery as well as the general practitioner who must, on many occasions, suspect a surgical emergency early and start the proper treatment until the surgeon arrives.

1789—MEDICAL SOCIETY OF DELAWARE—1951

OFFICERS

President, Charles E. Wagner, Wilmington
President-Elect, Ervin L. Stambaugh, Lewes
Secretary, Andrew M. Gehret, Wilmington
Vice-President, Benjamin F. Burton, Dover
Treasurer, Joseph M. Messick, Wilmington
Executive Secretary, W. Edwin Bird, M. D., 822 N. American Bldg., Wilmington

American Medical Association (1951) Delegate: James Beebe, Lewes   Alternate: C. E. Wagner, Wilmington
Representative to Delaware Academy of Medicine, W O. LaMotte, Wilmington

STANDING COMMITTEES

Scientific Work

R. W. Comegys, Clayton
O. A. James, Milford
A. M. Gehret, Wilmington

Medical Education

R. O. Y. Warren, Wilmington
J. L. Fox, Seaford
H. W. Smith, Harrington

Publication

W. E. Bird, Wilmington
M. A. Tarumianz, Farnhurst
A. M. Gehret, Wilmington

Public Laws

J. S. McDaniel, Dover
J. W. Lynch, Seaford
E. R. Mayerberg, Wilmington
J. D. Niles, Middletown
V. D. Washburn, Wilmington

Budget

J. M. Messick, Wilmington
Charles Levy, Wilmington
M. A. Tarumianz, Farnhurst
W. T. Chipman, Harrington
J. R. Elliott, Laurel

SPECIAL COMMITTEES

Advisory, Woman's Auxiliary

Roger Murray, Wilmington
Charles Levy, Wilmington
J. M. Messick, Wilmington
J. J. Lazzeri, Smyrna
J. R. Elliott, Laurel

Cancer

D. M. Gay, Wilmington
J. V. Casella, Wilmington
J. F. Hynes, Wilmington
E. G. Laird, Wilmington
W. W. Lattomus, Wilmington
C. J. Prickett, Smyrna
R. R. Layton, Dover
James Beebe, Lewes
Bruce Barnes, Seaford

Tuberculosis

L. D. Phillips, Marshallton
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
J. S. McDaniel, Jr., Milford
L. C. McGee, Wilmington
J. M. Messick, Wilmington
C. J. Prickett, Smyrna
William Marshall, Jr., Milford
C. M. Moyer, Laurel

SPECIAL COMMITTEES

Maternal and Infant Mortality

A. H. Williams, Laurel
C. T. Lawrence, Jr., Wilmington
C. L. Hudiburg, Wilmington
S. W. Rennie, Wilmington
R. O. Y. Warren, Wilmington
B. F. Burton, Dover

Mental Health

G. W. K. Forrest, Wilmington
J. S. McDaniel, Jr., Dover
O. V. James, Milford

Industrial Health

L. C. McGee, Wilmington
G. H. Gehrmann, Wilmington
H. L. Springer, Wilmington
E. H. Mercer, Dover
H. V'P Wilson, Dover
D. L. Bice, Seaford
A. C. Smoot, Georgetown

Vocational Rehabilitation

James Beebe, Lewes
G. A. Beatty, Wilmington
I. M. Flinn, Wilmington
T. B. Strange, Wilmington
W. C. Pritchard, Smyrna

Heart Disease

E. R. Miller, Wilmington
A. H. Clagett, Jr., Wilmington
E. M. Krieger, Wilmington
F. R. Everett, Dover
R. L. Klingel, Lewes

Diabetes

L. B. Flinn, Wilmington
J. R. Durham, Jr., Wilmington
Charles Levy, Wilmington.
L. L. Fitchett, Milford

Arthritis

A. J. Heather, Wilmington
I. M. Flinn, Wilmington
A. R. Shands, Wilmington
C. C. Fooks, Milford
O. A. James, Milford

Health & Sanitation

E. R. Mayerberg, Wilmington
G. A. Beatty, Wilmington
V. D. Washburn, Wilmington
W. T. Chipman, Harrington
H. V'P. Wilson, Dover
Bruce Barnes, Seaford
E. L. Stambaugh, Lewes

Fees for Welfare Patients

R. W. Comegys, Clayton
A. R. Crutchley, Middletown
J. W. Lynch, Seaford

SPECIAL COMMITTEES

Medical Service and Public Relations

E. R. Mayerberg, Wilmington
B. M. Allen, Wilmington
W. O. LaMotte, Wilmington
C. L. Munson, Wilmington
W. M. Pierson, Wilmington
J. S. McDaniel, Dover
H. V. P. Wilson, Dover
J. W. Lynch, Seaford
O. A. James, Milford

Rural Medical Service

J. R. Downes, Newark
C. R. Donoho, Newark
J. D. Niles, Middletown
C. J. Prickett, Smyrna
H. W. Smith, Harrington
Bruce Barnes, Seaford
H. S. Riggin, Seaford

Care of Colored People

H. T. McGuire, New Castle
Conwell Banton, Wilmington
S. G. Elbert, Jr., Wilmington
I. J. MacCollum, Wyoming
J. L. Fox, Seaford

National Emergency Medical Service

J. R. Beck, Wilmington
C. L. Munson, Wilmington
W. F. Preston, Wilmington
S. H. Stradley, Wilmington
V. D. Washburn, Wilmington

Medical Economics

Ira Burns, Wilmington
J. S. McDaniel, Jr., Dover
J. E. Marvil, Laurel

Hospitals and Practice of Medicine

J. W. Howard, Wilmington
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
W. O. LaMotte, Wilmington
C. E. Wagner, Wilmington
J. S. McDaniel, Dover
J. B. Waples, Georgetown

Social Hygiene

A. D. King Wilmington
E. H. Mercer, Dover
James Beebe, Jr., Lewes

Grievance Board

G. W. K. Forrest, Wilmington
I. L. Chipman, Wilmington
J. D. Niles, Middletown
I. J. MacCollum, Wyoming
James Beebe, Lewes

WOMAN'S AUXILIARY

Mrs. Douglas M. Gay, *President*, Wilmington
Mrs. S. W. Rennie, *President-elect*, Wilmington
Mrs. Andrew M. Gehret, *Recording Secretary*, Wilmington
Mrs. E. T. O'Donnell, *Corresponding Secretary*, Wilmington
Mrs. Lawrence W. Fitchett, *Treasurer*, *Milford*

NEW CASTLE COUNTY MEDICAL SOCIETY

Meets Third Tuesday

V. D. Washburn, *President*
W. W. Lattomus, *President-elect*
S. H. Stradley, Jr., *Vice-President*
H. H. Stroud, *Secretary*
C. M. Bancroft, *Treasurer*
E. C. Syrovatka, *Executive Secretary*

Councilors (1952): L. C. McGee, H. T. McGuire, J. C. Pierson.

Delegates (1951): E. M. Bohan, Ira Burns, Junius A. Giles, A. D. King, E. G. Laird, W O. LaMotte, Sr., Charles Maroney, E. M. Mayerberg, W. M. Pierson, Edward Parvis, O. N. Stern, H. H Stroud, M. A. Tarumianz.

Alternates (1951): Steven Bartoshesky, Joseph Beck, Allen Fleming, Mildred Forman, David J King, A. G. Lessey, Wm. T. McLane, Douglas Sanders, Paul Shaw, Roger B. Thomas, R. O. Y. Warren

Delegates (1951-52): N. L. Cannon, I L. Chipman, Sr., J. A. Giles, A L. Heck, Charles Levy, C. L. Munson, M. B. Pennington, J. C. Pierson, S H Stradley, Jr., G W. Vaughn, V. D. Washburn.

Alternates (1951-52): L. Y. Anderson, R. E Allen, J. W. Barnhart, J M Barsky, Jr., W. W. Briggs, Italo Charamella, J A. Chrzanowski, C. T. Lawrence, F. A. Jones, C. P. Johnson, T E. Resnick, F. S. Skura, H A Tarrant

MEDICAL COUNCIL OF DELAWARE

Hon. Charles S. Richards, *President*; Joseph S McDaniel, M. D., *Secretary*; Wallace M. Johnson.

KENT COUNTY MEDICAL SOCIETY

Meets First Wednesday

R. R. Layton, Jr., *President*, Dover
J. B. Baker, *Vice-President*, Milford
J. S. McDaniel, Jr., *Secretary-Treasurer*, Dover

Councilors: C. J. Prickett, Smyrna and Wm. Marshall, Milford.

Delegates: H. V. P. Wilson, Dover, and I. J. MacCollum, Wyoming.

Alternates: J. S McDaniel, Dover, and H. W Smith, Harrington.

DELAWARE STATE DENTAL SOCIETY

J. S. Mack, *President*, Seaford
J. F. Maguire, *1st V. P.*, Wilmington
H L. Kurfirst, *2nd V. P.*, Wilmington
James Krygier, *Secretary*, Wilmington
Louis Kreshtool, *Treasurer*, Wilmington
P. E. Musselman, *Delegate A.D.A.*, Newark.
Clyde Nelson, *Alternate A.D.A.*, Milford.

DELAWARE STATE BOARD OF HEALTH

J. D. Niles, M. D., *President*, Middletown; I. J. MacCollum, *Vice-President*, Wyoming; C. E. Moore, D. D. S., *Secretary*, Seaford; C M Moyer, M. D, Laurel, Mrs. Edith R Kendall, Wilmington; Mrs. A. Louise Cochran, Middletown, Rl., Howard N Stayton, M. D., Wilmington, Mrs. N. W. Voss, Wilmington Floyd I Hudson, M D., *Executive Secretary*, Dover

BOARD OF MEDICAL EXAMINERS

J. S. McDaniel, *President-Secretary*; H V P. Wilson, *Assistant Secretary*; W E Bird, J E Marvil, G. A. Beatty.

SUSSEX COUNTY MEDICAL SOCIETY

Meets Second Thursday

O. A. James, *President*, Milford
J. L. Fox, *Vice-President*, Seaford
T. J. Tobin, *Secretary-Treasurer*, Milton

Councilors: J. W. Lynch, Seaford; A. C. Smoot, Georgetown.

Delegates: Bruce Barnes, Seaford; D. L. Bice, Seaford; C. M. Moyer, Laurel; G. M. Van Valkenburgh, Georgetown.

Alternates: W. G. Hume, Selbyville; R. L. Klingel, Rehoboth; A. C. Smoot, Georgetown; E. L. Stambaugh, Lewes.

DELAWARE ACADEMY OF MEDICINE

Open 10 A.M. to 5 P.M.

B. M. Allen, M.D., *President*.
W. M. Pierson, M.D. *First Vice-President*.
R. R. Wier, D.D.S., *Second Vice-President*.
A. M. Gehret, M.D., *Secretary*.
I M. Flinn, M D., *Treasurer*.
E. C. Syrovatka, J. D., *Librarian*.

DELAWARE PHARMACEUTICAL SOCIETY

J Wallace Watson, *President*, Wilmington
Landis Wilson, *First Vice-President*, Georgetown
Norman Chamberlain, *Second Vice-President*, Harrington.
Grover Ashton, *Third Vice-President*, Milford.
Harry C Zeisig, *Secretary*, Milford.
Albert Dougherty, *Treasurer*, Wilmington.

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 8

AUGUST, 1951

Per Copy, 50c
Per Year, $4.00

PREVENTIVE PSYCHIATRY IN DELAWARE

M. A. Tarumianz, M. D.,*
Farnhurst, Del.

It is true that persons begin life with certain inherent traits and tendencies. Given a normal physical body, an individual life is composed of psychological traumas when anything occurs in the life pattern which radically differs from the average pattern. It is entirely within the realm of possibility that the process of being born is an important psychological event in the life of the child. The mere process of birth is the first human important experience which the organism must meet and it is accompanied by a certain amount, or I would rather say, a considerable amount of physical discomfort. After birth, the child must perform, without aid, certain primitive acts in order that life may be sustained. Instinctive and reflex as these acts are, they are, nevertheless, a vital change in the life pattern. Interesting as this is from a speculative viewpoint, we do not know what effect, if any, this possibly terrifying procedure of being born exerts on the development of the child. I am, of course, eliminating permanent physical birth injuries which are often the cause of maladjustment as well as difficulties due to organic diseases of the brain. From our present knowledge, we know that we have at birth a living mass of protoplasm which can be markedly affected by its environment and which is exceptionally imitative and suggestible. We cannot definitely state which characteristics are inherited and which are not. We do know that certain physical traits are present which have been definitely transmitted from the parents and we are reasonably sure that the degree to which a child may be developed intellectually is also present. Beyond this all factors of inheritance are theoretical. In view of this fact, it is entirely possible that the child's adult behavior depends largely upon its early environment.

Early in life, the maternal role is of greatest importance. By the maternal role, we mean the individual who has the direct care of the child and not the physical relationship. The child shows most markedly its affection toward the mother in early years and it is natural since she is the course of the supply of food and provides body comforts. Towards her he looks for that security which is so necessary to the development of the healthy adult. This excess emotional attachment to the mother is not due to a personal relationship and is not an individual attachment since the infant would have the same feeling toward any person who cared for its immediate needs. The very young child needs very little attention beyond care of its immediate needs of producing physiological comfort in care and feeding. There is great danger in over-attention at this age, particularly if it is a first or only child, since the mother is often lonesome and derives pleasure from playing with the infant; also her natural pride leads her to parade her baby before others and to attempt too early to push it intellectually. The mother must remember that the child is not a toy. Over attention, even in infancy produces a demand for a continuance of such as well as producing a false feeling as to the importance of one individual in the group relationship of later life. Moreover, if other siblings arrive, the resulting trauma is more difficult to bear since that feeling of maternal dependence with its accompanying sense of security is so strong that the advent of another child produces a feeling of insecurity, if there is a marked change in the amount of attention which has been received. This often leads to a jealousy and unhealthy rivalry of siblings which may become a serious problem in the adjustment of the child and may produce marked behavior diffi-

---

*Superintendent, Delaware State Hospital and Governor Bacon Health Center; Director, Mental Hygiene and Child Guidance Clinics; State Psychiatrist.

LIBRARY OF THE
COLLEGE OF PHYSICIA
OF PHILADELPHIA

culties. The need of a feeling of security is so essential throughout the entire development of the individual that care must be taken not to endanger it at any time. The early feeling of insecurity may produce and often does, an adult who fails to reach the highest possible development because of a fear of giving up even the slightest amount of security which is present in order to realize higher ambitions. The feeling of rejection which a child must experience when it has received an excess of early attention which must later be lessened or under some circumstances entirely disposed, brings into play one of the fundamental instincts, that of self-preservation. The pressure caused by over activation of this instinct must have release, the manner of obtaining this release being based on the attitude of the parents, particularly the mother in early years of life. If the child is aggressive he may attempt to physically harm the object which has endangered the fundamental feeling of security, temper tantrums may result and become a permanent part of the picture, if desires are gratified by them. Stealing, running away or other attention gaining mechanisms may be used and may become a permanent part of the personality picture, developing almost habitual aspects. If the child is submissive, his behavior may be all that could be desired but there will be an anti-social reaction in the form of withdrawal and abnormal phantasy formation. In the more extreme cases and fortunately rare ones, there may be attempts of self destruction. Suicide may be an attention gaining device since some children do not appreciate the meaning of death and are merely impressed by the amount of sorrow and attention surrounding the death of the individual. In this case, it is an aggressive act, its aim being to secure attention as well as to inflict injury to that individual who has threatened one of the essential needs of the organism, a feeling of security.

It is important that resistance towards adversity must be built up early in the life of the human organism when pliability of behavior is still present. Thus with each generation it becomes ever more necessary to train a child to meet frustrations which are bound to occur with increasing intensity.

Paternal role in early life of the child is frequently of too little importance. The child does not recognize the position of the father in the family group since his contacts with him are too slight. He does not recognize the essential relationship which exists until he is considerably older. Depending upon his disposition, he may be either a playfellow or an individual to be feared. The affection existing between the father and child is not as strong as that of the mother in that the greater part of the father's life is spent outside of the home. It is probably true that the same maternal relationship will exist when the mother is in business and the training of the child is left in the hands of hired help. However, the relationship between the parents in the home may have a definite and lasting emotional effect. The combined parental roles is of great importance in child psychology. Too often, one parent will show sympathy when the other has been attempting discipline. In studying the personality of the parents, this often is found to be based on a play for the child's affection. The father may reject the child because of jealousy of the attention which it obtains from its mother. More often the child is jealous of the father because of the attention which is given him when he arrives in the home. The mother who has been over-demonstrative during the day changes her attitude on the arrival of her husband and gives him the attention which the child feels rightfully belongs to him. This jealousy may cause the same behavior reactions which we find occurring in jealousy directed toward other siblings. Too often, the parents project their own unfulfilled wishes and desires into the child, in spite of the child's inherent abilities. They attempt to make of him what they would liked to have been.

On entering school the problems become more complex as the control of home is loosened and the child begins to learn that there are different standards as to what may be considered acceptable or non-acceptable behavior. These depend primarily on two definite factors, economic and social and intellectual endowment. In considering the child who is of normal intelligence we must recognize the fact that due to financial status of the family if it be in the lower group, there are certain opportunities which that child cannot have.

There are also certain educational limitations. It may be necessary for the child to leave school before completing the upper grades.

The wisest parent allows a child, upon approaching adolescence, to have full insight into the possibilities which are at his disposal. He gives him a clear understanding as to how much he can do for him. At the same time he encourages him to use his own initiative to progress further. On the other hand, the child from the home which is better equipped financially, should be trained to recognize that money as such is of a material nature. He should be taught to appreciate not the financial standing of his school group but the inherent character of the children with whom he associates in the classroom. To broaden his own understanding of life, he should be encouraged to pick his friends on a basis of character and individual achievement, rather than on the purely material basis of financial standards.

We all recognize the fact that all children are not endowed equally intellectually. It is essential that the parent recognizes the ability of the child and that he does not mistakenly encourage the child to go into some field for which he does not have the proper intellectual capacity and the proper type of personality. Adjustment implies — fitting in, adopting to change and relating oneself appropriately to others. Adjustment has personal and social aspects. The personal phase is based upon various emotions that determine behavior while social refers to the rules of society.

The ability to conform to social rules and requirements is important.

The conflict of the parent, the frequent accusations and hostile motives, all the bitterness and competition for child's favor, act as a psychological poison.

The child's greatest need is to have an adequate picture of family relations as a guide to his own future life. One of the most common ways of responding to difficulties and frustrations is through escape which may be an attempt to evade responsibility. Such persons are usually unable to measure up or carry out what is expected of them. Usually the aggressive child makes a determined effort to affect an adjustment while the fearful, timid child is not actively and seriously attempting adjustment. The withdrawn child is in need of more help than the aggressive individual. Though, sometimes withdrawal can be considered a kind of adjustment because the shy retiring person is unable to compete with others and retreats because he fears becoming involved in a situation that will be threatening. This type of withdrawal is very common in children between the ages of five and eight years of age.

It is obvious that adult - child relationship is of major importance because the child imitates, copies and strives to emulate and admire the adult. Therefore, the parent and teacher must take an inventory of themselves and be aware of what they really are as persons. The family should provide the child with a desirable status in the community and belongingness in the group and much needed affection and love.

Although mental handicaps and social maladjustments are of equal importance, the subject is fairly recent and the information regarding such conditions is new so that knowledge concerning the symptoms of such conditions is not as general, often resulting in an improper handling or ignoring of the problem until permanent crippling results, thereby handicapping the individual for a satisfactory social adult adjustment.

Until those trained for teaching learn to recognize each child as an individual and not merely as one of a group of thirty or so children, it will be impossible to successfully adjust the problems. It is also of supreme importance that the one in charge be familiar with the motivation preceding such conduct disorders.

These environmental conditions, since we know the cause, can often be readily alleviated without much difficulty if the parents will face the situation and help the teacher in her efforts with the child. There are, however, behavior manifestations for which the cause cannot be found in the home environment. These are of a more serious nature and as the child grows older—become more serious problems. Such conditions are usually the result of feeling of insecurity and inability to establish recognition of its ego.

Security is not a constant situation which does not vary with each individual; it depends greatly upon the status of life in which a certain person has been reared, upon the community in which he lives, and upon the training which he had received; in a broader sense we may feel that it also depends upon the generation in which the individual is living.

It is true that the human individual is highly adaptable and may readily change from one given situation in life to another, the greatest harm being done by the abruptness of the change rather than the actual end results of that change. There are certain types of individuals who from any inherent feeling of inferiority are never at rest with their environment but who always feel the presence of some impending tragedy.

We have before us one of the essential factors in preventive work of mental conditions—the necessity of giving to every individual a sense of security in his environment. It is the duty of all thinking people to realize that food and shelter and various technological gadgets are not the only necessities of life, but each individual must have an opportunity of completeness in his mental and spiritual life. Each individual should have the satisfaction of feeling that he has obtained security through his own efforts. Society should see that each individual has this opportunity.

Therefore, in order for the individual to achieve successfully his goal in life he must have surroundings which can help him to withstand the daily shocks and blows of his environment. To learn the application of his native talents he has to have guidance and direction of his parents, teachers and others who become his immediate environment.

In recent years we have become increasingly aware of the problems of mental health and mental illness. We also recognize the fact that it is necessary to go beyond the problem of the acutely ill for the purpose of prevention. In other words we are concerned now more about mental health of the so-called normal people.

It is true that we have to make all the necessary provisions for early treatment of the recognized acutely mentally ill and that such care and treatment should be established adequately in all public mental hospitals as well as in large general hospitals. However, mental hygiene activities should go into the routine of kindergartens, public schools, industry, the public sphere of activities, and the homes of the families.

When a child is found, through various facilities such as clinics, schools, family physicians, pediatricians, various social agencies, church, juvenile and family courts and others interested in the welfare of the child, not responding to extra-mural treatment, he should be hospitalized in a psychiatric preventive center where a well organized team, composed of psychiatrists, pediatricians, psychologists, social workers, educators and others, will tackle the problem intelligently and understandingly.

While the child is under treatment in the Center, plans for his future socialization in the community must be worked out by the staff. Such a planning program should incorporate various social outlets in addition to home, school and church.

Having the above philosophy in view, the state of Delaware established the Governor Bacon Health Center primarily as a psychiatric preventive hospital for children. The state has been very generous and has appropriated sufficient funds for such a state-wide activity.

Let us see what has transpired between the opening of the Governor Bacon Health Center from November 1948 until the first of July 1951. What actually has been accomplished?

Since that time in November 1948, 222 children have been admitted to the Governor Bacon Health Center as maladjusted. Of these 164 were boys and 58 girls. They ranged in age from 4 to 16. Of the 164 emotionally disturbed boys, 37 have benefited from their therapy and experience in group living to the point where they could be discharged as improved to their own homes. Fifteen other boys improved sufficiently to be discharged but, because their home situation was such, they could not be discharged to their homes but had to be placed in a foster home situation. The total number of boys then who have improved as a result of their experiences and therapy is 52 (37+15) which means 31.7% of the total number of emotionally disturbed boys who have been at the Governor Bacon Health Center since its opening. Of the 58 girls who were here, 12 were returned to their own homes improved. An additional 8 girls improved sufficiently to go to foster homes. This represents 34.4% of the total girls treated at the Governor Bacon Health Center since its opening.

The United States government informs us that an adult, in his lifetime as a citizen, averages fifteen thousand dollars worth of taxation. If we have rehabilitated these children permanently as healthy citizens of Delaware and the United States, we have more than justified the expense of the Governor Bacon Health Center. It remains to be seen how many of these children maintain their improvement, avoid future difficulties, and remain as healthy citizens.

Since its opening until present, 136 children were admitted as social problems. Of these 74 were boys and 62 girls. This means that they were sent to the Governor Bacon Health Center for care until a home could be provided for them.

In the same period of time 13 children were admitted who were considered psychotic and pre-psychotic. Of these 12 were boys and only one, a girl. It was necessary to transfer only two of these to the State Hospital. Five of these children were well enough to go to their own homes. This represents 41.6% of the total.

In the rheumatic fever section for convalescent children, 25 children have been admitted in this period of time. Of these 19 were boys and 6 girls. Fourteen of these 25 were discharged to their home, improved, representing 56%.

In the convulsive section we have received 44 epileptic children of whom 24 were boys and 20 girls. Thus far 5 of the total have been discharged to their family as improved, representing 11.4% of the total. We feel that this is not a true representation of improvement in epileptics because of the type of patient seen in our particular group. The incidence of mental deficiency with epileptics in our particular group was very high.

In our crippled children's section we have had a total of 79 patients of whom 47 were boys and 32 girls. They represented varying diagnostic category. They have been given intensive care representing general nursing care, speech therapy, physical therapy, special schooling, and surgery. Thirty-three of the total have been discharged improved, constituting 41.8% of the total.

We are hoping to be able to show in a few years the justification for such an expenditure on the part of the taxpayers. It is well known that the maladjusted children of today are the serious liabilities of the future.

DIAGNOSIS AND TREATMENT OF ANXIETY STATES*

Joseph Hughes, M. D.**
Philadelphia, Pa.

Introduction

Public Health Surveys based on Selective Service Data from World War II estimate that there are in the United States 8,500,000 emotionally disturbed individuals who are potential psychiatric patients[1]. Other studies show that 1,134,000 children have behavior disorders[2]; 750,000 adults are chronic alcoholics while 11,998,000 are addicted to the excessive use of alcohol.[3] In the field of chronic psychiatric illness, statistics show a census of 938,000 patients in the mental hospitals of the United States[2] with a yearly admission rate of 114,535 patients.[4]

Clinically it has long been recognized that before patients develop serious psychiatric disorders they experience periods of recurrent emotional distress marked by stages of increased psychic tension, lessening effectiveness, persistent functional somatic symptoms and recurrent periods of anxiety. This paper is directed towards a consideration of patient needs in this period of distress prior to the development of a psychiatric illness. It implies that early recognition of pathological anxiety and prompt treatment is the most effective means to decrease the incidence of chronic emotional illness.

Anxiety is common to all illness. When it causes a patient to seek treatment for his symptoms it is normal and protective. However, when anxiety exists without any known cause and when it results in a prolonged state of deep foreboding or fear for which the patient has no explanation, it is abnormal and pathological. Investigation of such reactions always reveals evidence of repressed emotional conflicts beneath the level of conscious awareness that are of sufficient intensity so as to give rise to the symptoms and emotional reactions of the patient.

---

*Read before the Medical Society of Delaware, Dover, October 3, 1950.

**Professor of Psychiatry, Woman's Medical College of Pennsylvania, Consultant at the Gov. Bacon Health Center, Delaware City, Del.

Classification of Anxiety States

Anxiety reactions are best diagnosed and classified in terms of dynamics and psychopathology rather than in descriptive terms of the surface behavior and symptoms of the patient. In such a classification, the anxiety seen in a psychoneurosis is perceived as a threat by the conscious personality whereas its origin is usually found in repressed, culturally non-acceptable emotions which give rise to conflict. These conflicts are then repressed from conscious awareness and are displaced or converted into functional somatic symptoms or expressed in personality reactions characterized by withdrawal or hostility or dependency, or expressed in terms of "free floating" anxiety. The dynamics of a psychoneurotic reaction revolve around conflicts in the field of emotional communication: parent-child, sibling or group relationships.

In contrast to psychoneurotic disorders, there is little if any anxiety perceived by the patient who suffers from a character or a behavior disorder because of the patient's capacity for the uninhibited acting out of hostility or aggressiveness. Character and behavior disorders are subdivided into the following classification: pathological personality types (schizoid, paranoid, cyclothymic, antisocial, asocial, sexual deviates and addicts), immaturity reactions and emotional instability. In an immaturity reaction or in emotional instability anxiety manifests itself under conditions of minor stress and is an expression of a life long pattern of behavior. The reactions of such patients are characterized by undependable judgment, fluctuating emotional attitudes and explosive feelings.

Anxiety when it is a symptom of a psychosis manifests itself in terms of a panic reaction accompanied or preceded by chaotic, disorganized behavior and reflects gross distortion in accepted values. In a psychosis there is always evidence of personality disintegration, emotional disharmony and unpredictable mood swings accompanied by an inability on the part of the patient to be close to or effectively related to another person. Psychotic disorders are always marked by disturbance in the ability to perceive reality and by a lack of judgment and insight.

At the risk of over-simplification it may be stated that the common sources of anxiety in our present cultural pattern are: threatening infantile or childhood experiences (physical and or emotional); poor conditioning for adult life; failure to attain life's goals (important after age 40); overwhelming environmental demands (war) and situational maladjustments.

The following factors enter into the problem of recovery: the significance, to the patient, of his conflicts; the skill of the physician as a therapist; the inherent capacity of the patient to adapt himself to threatening situations. Concerning the factor of adaptability it may be useful to know that studies on group behavior, under conditions of sudden, overwhelming stress, indicate that 25 percent of individuals show a superior capacity for effective adaptation and react with purposeful activity, 60 percent react noneffectively with random activity while 15 percent react totally ineffectively with purposeless activity. The present view is that adaptability is both psychologically conditioned and genetically determined.

Treatment

The first step in the treatment of anxiety is psychotherapy. Directed activities including physical exercise, occupational therapy and physiotherapy have also a role. Sedation should be employed for the relief of acute symptoms. In addition the general nutritional state and physical health of the patient cannot be overlooked. Since a main interest of this paper is early diagnosis and treatment the technique and clinical effectiveness of psychotherapy will be discussed in more detail.

Psychotherapy revolves around the doctor-patient relationship. It involves the emotional attitude of the doctor and of the patient as well as all the spoken and unspoken communications that are a part of a personal relationship. On the verbal or spoken level it involves explanation, reassurance and suggestion. On the nonverbal level it involves sharing, identification, loyalty and the growth and development of insight. A first essential is the ability to establish a close, warm and sympathetic contact with the patient and his problems in order to facilitate the patient's capacity for communication. If the physician is defensive, authoritative or angry his effectiveness as a psychotherapist is blocked.

Consideration of the clinical results seen over a four year period in the Veterans Psychiatric Clinic at the Woman's Medical College Hospital will give some indication of the role and effectiveness of psychotherapy. The 478 patients treated during this period of time were men who had seen service in World War II. Therapy averaged one hour per week for 16 months. From a diagnostic standpoint 176 of these patients suffered from psychoneuroses, 224 from character neuroses (immaturity reactions, emotional instability) and 78 from psychotic or latent psychotic reactions (schizophrenia). Of the 176 patients with psychoneuroses 64 (36 percent) showed marked improvement (relatively symptom free, effective relationships with people); 90 (51 percent) showed moderate or slight improvement (anxiety still present under conditions of moderate stress, moderately effective with people) and 22 (13 percent) showed no improvement (anxiety present with little or no stress, non-effective personal and/or work relationships). Of the 224 patients diagnosed character neurosis only 10 (0.4 percent) showed marked improvement, 92 (41 percent) moderate or slight improvement and 122 (58.6 percent) no improvement. Of the 78 patients with psychoses 32 (41 percent) showed marked improvement, 26 (33 percent) slight improvement and 20 (26 percent) no improvement.

In another clinic staffed by the same psychiatrists a group of 50 patients have been under treatment for more than a year, suffering from severe psychosomatic disorders. None of these have made a complete recovery despite a year of combined psychiatric-medical treatment in favorable clinical circumstances. Those few patients, less than 10 percent, who have shown some lessening of their symptoms did so only after altering the situational difficulties in their home environment through the combined team efforts of the psychiatrist, the public health psychiatric nurse and the psychiatric social worker.

Considering the clinical results seen in these two groups of patients it is clear that given the same degree of skill in psychotherapy other determining factors in recoverability are: the life situation of the patient; his inner resources; the potential for softening or changing the unfavorable social factors feeding the patient's conflicts.

Discussion

For the clinician to be able to successfully understand and design a treatment program for his patient he must realize that anxiety can be best relieved by communicating one's thoughts and feelings to another and by goal directed activity. From this it follows that a first therapeutic step is to encourage and permit the patient to talk himself out. From the emotional cues that develop out of the patient's productions the direction of therapy is determined. In this regard two questions must be answered: What is the patient's conflict? What steps must be taken to resolve the conflictual situation?

It is to be remembered that an anxiety state does not develop suddenly, but grows out of an intolerable accumulation of unacceptable emotional relationships throughout the lifetime of the patient. The precipitating factor should be viewed as the last event in a long train of emotional trauma.

The length of the psychotherapeutic interview must be sufficient for the patient to perceive the friendly, kindly and sympathetic attitude of the physician. Thirty to sixty minutes may be considered as satisfactory for this purpose. Each interview should be concluded in an atmosphere of mutual confidence. It is also good clinical procedure to outline a program of physical activity and a schedule for daily living that will substitute activity for indecision. The patient with anxiety is frequently blocked in his ability to communicate to his physician because of his unconscious feelings of guilt or anger directed at someone within a close family or love relationship. To facilitate breaking through this block, criticism on the part of the physician, expressed or unexpressed, is to be avoided. When this block in communication remains resistant, sodium pentathol intravenously or sodium amytal by mouth, frequently prove to be effective release agents.

In all the permissiveness practiced by the physician during the psychotherapeutic interview, there must never be conveyed to the patient any approval of behavior that would encourage the patient to maintain his neurotic pattern. Hostile attitudes on the patient's part must be carefully appraised and analyzed. The physician should not hesitate to take an active role in helping the patient to resolve his conflicts. As far as possible the patient's daily life experiences should be used as the background for guiding him in an understanding of his problem. The patient must feel that his problems are understood and shared by the physician, the nurse and the social worker and he must feel their loyalty to his problem. This attitude of professional helpfulness and loyalty must at all times be expressed not only along friendly but also along commonsense and realistic lines.

If insight into disturbed emotional relationships is to be achieved through discussion, it must be attained through the patient's own perception of his problem. It is a shortsighted therapeutic view to believe that a patient's entire treatment should center around his relationships with his physician, and every effort should be taken to utilize the corollary skills of the psychiatric public health nurse and psychiatric social worker for creating favorable standards of health (physical and emotional) in the home and to achieve satisfactory relationships in the patient's contacts in the community and at work.

111 North 49th Street.

REFERENCES

1. Limburg, Charles C.: The Need for Psychiatrists and Psychiatric Training Facilities. Read at A. P. A. meeting, Washington, D. C., May 17, 1948.
2. Lemkau, Paul; Tietze, Christopher, and Cooper, Marcia: A Survey of Statistical Studies on the Prevalence and Incidence of Mental Disorder in Sample Populations. Pub. Health Reps., Reprint No. 2534, 58: 1909-1937. December 31, 1943.
3. Jellinek, E. M.: Recent Trends in Alcoholism and in Alcoholic Consumption. Quart. Studies on Alcohol, Pub. 2162, Yale Station, New Haven, Conn., 1947.
4. Patients in Mental Institutions, U. S. Dept. of Commerce, Bureau of the Census, 1945.

Discussion

Dr. A. L. Ingram, Jr. (Wilmington): I would like to express my appreciation to Dr. Hughes for a most interesting and certainly a most timely review of the problem of anxiety. Abnormal anxiety, as delineated by Dr. Hughes, is being seen more and more in these times of increased external pressures in the form of international and domestic unrest. Given these external pressures in combination with inner conflicts, which are completely unrecognized by the patient, and you have a patient who is familiar to all who practice medicine, whether they may be general practitioners, internists, or surgeons.

I would like to stress the importance of the attitude of the physician in the treatment of these anxiety states. All too often, as Dr. Hughes pointed out, these patients are dismissed with the comment, "Oh, those pains are just your imagination; don't worry about them." I would like to emphasize that these people are sick. The pain of a conversion hysteria is just as real as the pain of acute appendicitis, and has a pathological background just as real as the latter. Thus, reassurance and explanation are far more beneficial than the threatening implications inherent in such a remark as quoted above.

Again it should be emphasized that many of these minimal superficial states of anxiety can be resolved without recourse to the services of the psychiatrist. This can be accomplished in many cases by the simple technique of being a good listener, which Dr. Hughes mentioned. The anxious patient is eager and many times desperate to tell his story. He needs a friend, he needs a confidant, and in the ventilating of his problem he not only dissipates some of this anxiety we are talking about but actually clarifies the difficulties in his own mind. We do not know how many malignant neurotic states are prevented by this simple expediency of listening well, but the figure can be high.

Finally, the thought occurs to me that it would be well to bear in mind the role that anxiety plays as a reaction formation to the presence of a severe disease. This again is seen in every day practice. It is what the general practitioner with many years experience takes into consideration when he treats the patient as a whole, and not just the disease.

Anxiety over illness can be a determining factor in the ultimate outcome of the disease process itself, particularly in such conditions as coronary thrombosis, hypertension, and peptic ulcer, to name a few. Indeed, the life expectancy in coronary thrombosis is directly related to the degree of anxiety present in the patient over his illness.

In the less severe forms of illness, we find that anxiety still is a factor to be reckoned with, or although it is not perhaps related directly to the life expectancy, it is often a retarding influence in the getting well process.

Dr. A. M. Tarumianz (Farnhurst): I hope that this masterfully presented paper of Dr. Hughes will not create any anxiety in the minds of the doctors. In primitive life we certainly didn't know anything about anxiety states. Since life in this complex world has become so intricate and so difficult, and since we have not advanced technologically from the standpoint of our brain activity to meet with these problems adequately, we are bound to go through various types of anxieties.

There are anxiety states which I consider absolutely normal in any human being. That is, unless the person is so defective that he cannot react to conditions surrounding him. Whether those conditions are of a physical nature, or emotional, cultural, or any other type, the fact remains that unless the person has been trained from early childhood to recognize his own personality, to have a concept about his liabilities and assets of his personality, how do you expect that individual to learn how to exercise his assets as compensation to his liabilities? Life itself is one of the biggest of businesses, and from that particular standpoint my only suggestion would be that we as medical men do not hesitate to consider every normal anxiety as the first step to possible serious anxiety states in the future, and possibly to frank psychotic conditions.

Therefore, Dr. Hughes' lecture was very timely. I don't think there are enough psychiatrists to assume the responsibility for all psychiatric problems which are obvious to the minds of laymen. You are general practitioners and medical men in all specialties. You are the ones who will discover the first signs of a serious anxiety state, and obviously it is entirely up to you to recognize this condition and immediately take adequate steps to overcome the difficulty.

I also believe that all general practitioners should be able in the 20th century to handle most of the psychiatric problems that don't require special attention. I hope Dr. Hughes will agree with me because otherwise I am afraid that you are expecting entirely too much from 5000 psychiatrists practicing psychiatry in the United States. I think every general practitioner is fundamentally a psychiatrist with God-given ability to understand the problems of human beings, and unless he understands them I don't think he is qualified to practice medicine.

I have learned in my forty years of medical practice one thing, that regardless of my knowledge of psychiatry and neurology and medicine as a whole, I fail my patient unless I try to be a human being and put myself in his place. The mere statement that there is nothing the matter with you is certainly not a remedy, nor is a prescription of sedatives an answer to a serious problem of human life.

May I also say at this time that we have no right to condemn the general practitioners. We as psychiatrists practice that unethical approach every day. We also deny the patient time to ventilate and purge himself, many times. So it is not only the general practitioner but the psychiatrists themselves, and I know that many of them, including myself many times, when they are dead tired and they have already seen six or seven patients, hardly have the ability to listen for an hour to a patient. Yet the patient doesn't recognize that.

So I think Dr. Hughes has presented a very fine approach on how we should deal with our patients.

I would like to ask Dr. Hughes, if I may, whether he believes that sometimes, quite frequently, after the patient has ventilated sufficiently, wouldn't he advise the general practitioners to not hesitate to go into a deeper layer of the problem and not to adhere to the superficial facade of the condition?

Dr. Hughes: I am grateful to Dr. Ingram for his critical summary of the role of anxiety in somatic disease and I am in complete agreement with him on the great need that exists to have the problem of anxiety recognized by the general practitioner at its onset so that prompt and effective treatment can be instituted.

Dr. Tarumianz raises a question of great importance when he asks to what degree should the general practitioner go in trying to bring insight to the patient? It is my belief that the general practitioner is ideally suited to enter into the process of psychotherapy and because of the rapport that exists between him and his patient he is ideally placed to probe into the unconscious factors underlying the patient's reaction providing that he does not attempt to make any psychiatric interpretation of his findings to the patient that is beyond his own training or experience.

NEUROPSYCHIATRIC EMERGENCIES*

Joseph C. Yaskin, M. D.,**
Philadelphia, Pa.

I rather fear that this presentation will be an anti-climax after the three previous ones, both from the standpoint of the subject matter, and more particularly from the standpoint of the time and weather conditions. I shall therefore take the liberty of curtailing my speech and making some few remarks that may be useful to you.

The subject itself sounds a little unusual. It is so far away from what is clear-cut, for instance, coronary occlusion or the management of anxiety. I am speaking of neuropsychiatric emergencies. They should be divided into neurological and psychiatric emergencies. One wonders what emergency a dermatologist or a neurologist may have. The neurology of today is vastly different from the neurology of those days when some of my colleagues of my own age level went to school. In those days neurology was a question as to who described what disease. The professor of neurology at the university doesn't know the names of most of the diseases Dr. Spiller and Dr. Mills worried about, and I feel better since I have forgotten them.

By neurological emergencies we mean those conditions which should be diagnosed early from the standpoint of treatment so that we can prevent death or invalidism. There are such conditions which have evolved, let us say, in the last several decades. They evolved first because we recognize disease entities more clearly; secondly, because we have much better therapeutic approaches, both surgical and medical. I will refer to just a few and I will be very snappy about it.

Neurology was and should remain a branch of internal medicine. When neurology or psychiatry becomes divorced from internal medicine, they become impotent. They become dangerously impotent, and the trend these days for some psychiatrists — and I am not referring to the Delaware School — stating that it isn't necessary to be a doctor in order to be a good psychiatrist, is very false. I am quite sure that as time goes along this truism will become more evident.

There are certain syndromes in neurology that one must recognize promptly. Among these are the infections of the nervous system. When this slide was made all we had was the sulfanilamides. Now, of course, we have much better approaches than the sulfanilamides, and an early diagnosis of infections of the nervous system is important.

Some of the younger men may worry why I am so concerned about the early diagnosis of meningitis, but it is a fact that meningitis is overlooked very often even in teaching hospitals. Not so many weeks ago, an elderly gentleman was admitted with an acute gastro intestinal disturbance. It wasn't until a week later that it was discovered that he had acute meningitis complicated by hepatitis. Treatment helped a little, and after about five weeks he left the hospital in pretty good condition.

Some of these conditions are very easy to diagnose, yet many an intern, or perhaps even a surgeon, forgets to do the minimum study, namely, the study for meningeal irritation, the stiff neck. Brain abscess is becoming less frequent due to the antibiotics, but I predict that as time goes on we will have more of them than we even had before, because the antibiotics mask the underlying intracranial complications.

Spinal epidural abscess is not a common disease. When diagnosed it is readily amenable to treatment. The usual story is that of the person who comes in with weakness of the legs and pain around the waist, or lower or higher, in whom there is often a history of a boil or a carbuncle, or some other focal infection of the skin. The patient complains of pain, then he loses power in his limbs, and if you do a spinal tap, you will find that he has a partial block with a high protein, and if you do a sensory examination you will get the level without any trouble. Operation should be performed as soon as the diagnosis is made, just as you would in the case of a perforated duodenal ulcer, or an acute perforating appendix. The results are excellent if you do it very early.

---

*Read before the Medical Society of Delaware, Dover, October 3, 1950.

**Professor and Chairman, Department of Neurology, University of Pennsylvania Graduate School of Medicine.

Most of the spinal epidural abscesses occur in the mid-dorsal region. I have seen them in the lumbar region and less commonly in the cervical region.

The chronic infections of the nervous system are not so important except syphilis. Syphilis — I mean neurosyphilis — still exists in Pennsylvania. Curiously, it may occur even among your best friends in whom you wouldn't dare to do a Wassermann. It isn't always easy to suspect neuro-syphilis. However, if as a part of your routine examination — and the surgeons should teach their surgical residents to do this — you just look at the pupils to see if they react to light, and take the reflexes, you might avoid all sorts of difficulties. I've seen patients who are operated on for gall bladder disease, and they always find a red gall bladder or strawberry gall bladder, but the patient continues having pains, and the real difficulty is tabes dorsalis And curiously enough, it occurs even in teaching hospitals. Only in the last four months there was a patient admitted with diagnosis of gall bladder disease, who just happened to have a touch of tabes. She was operated on before I saw her.

Trauma of the nervous system is becoming of greater importance than ever. Concussion of the brain and contusion and laceration of the brain, are some things of which every physician is fully aware. Injury to the middle meningeal artery fortunately is not very common. It is a very dreadful disease. As you all know, there is usually a clear history of trauma, a short period of unconsciousness, a longer period of lucidity, then profound stupor, often hemiplegia and death if you don't drill the hole. You don't wait for x-ray in those cases. When you make the diagnosis you ship them right up to the operating room and let the first resident that knows anything about using the Hudson drill get down there and ligate that artery.

Now, the chronic subdural hematoma is an important and common disease. Gentlemen, subdural hematoma is much more common than we think. I believe every physician should be keenly aware of the problem of the subdural hematoma. As you know, there is rarely a history of a good injury. The history usually comes after the patient recovers. The patient often complains of a great deal of headache, he is usually somnolent and restless, often screaming in his sleep with pain and may even be comatose. There is little increase in intracranial pressure, as revealed by choking of the discs, and you have to see a number of these cases before you suspect it. Let me cite some cases for you.

About five weeks ago, on a Thursday night, I saw a 77-year-old spinster with a very bad family history of heart disease and hypertension. She had heart disease and hypertension for many years. About ten days previously she fainted in the bathroom. Then she rallied and then began to complain of a little headache, and for the past three days was completely stuporous and unresponsive. Her family physician thought it was just another one of those strokes, although he didn't localize the lesion. On examination, I found a patient who was barely accessible, and quite sleepy. I was sure that she had weakness of her right hand. She had a right Babinski. I learned from the family that she didn't talk well for the last week even when she wasn't stuporous, and I found very distinct tenderness on percussion over the left side of the skull. After much arguing with her family physician, and even more arguing with the family, we had her admitted to the hospital, and at eight o'clock next morning the resident drilled a hole and found a nice big subdural hematoma on the left side. While on the operating table she began to talk, and as a matter of fact she hasn't stopped talking for three days after that.

The thing that I am describing to you now is not unusual. That is the usual thing in a subdural hematoma that is not decompensating. Of course, when one is badly decompensated, no matter how much you drill it doesn't work.

To give you an idea of the frequency of subdural hematoma, I might say that in the Graduate Hospital within 16 days we had some five verified patients. When I was an intern in the Philadelphia General Hospital I don't believe I ever knew there was a subdural hematoma. Now every stroke is thought of from that standpoint, and there are a number of emergency procedures for these cases.

Now the operable brain lesions, the brain tumors. You might ask, why is this an emergency? Well, it certainly is, because if you diagnose the pituitary tumor early you have a useful life of anywhere from five to thirty years. If you diagnose the pituitary tumor early, before patients get fat and pale, and before they are blind, most of them will yield to ordinary x-ray treatment. Few will require decompression. But they will live on and be useful citizens for many, many years. I regard this as an emergency. When they come to us blind and dilapidated, we can't do anything for them. And pituitary tumors are 17% of all brain tumors, and brain tumors are 4% of all tumors in the body, exclusive of the uterine fibroids, about which nobody keeps any statistics. Likewise with meningiomas; 13% of tumors are meningiomas, and if you get them early enough you can prolong the life of the individual and they remain useful anywhere from 5 to 25 years.

I have under my own care a woman who came to me in the early 20's, blind and dilapidated. We managed to localize a little tumor which wasn't larger than the end of my finger. For the succeeding few years I had to send gifts to her every few years because she proceeded to give birth to a baby every year.

The same is true of the cerebello-pontine angle tumor, which is rather easy to diagnose if they have deafness in one ear. This is usually treated by politzerizing. Still later in the disease you get cerebellar signs. If you get the cerebello-pontine angle tumors early, you get good recoveries. If you neglect them, if you don't treat them as emergencies, if you forget about them, you get a lot of invalids. So you have 17, and 13, and 8%, or about 38% of brain tumors wherein the patients can be made into useful citizens if you diagnose them soon enough.

The brain abscess problem is a rather difficult one, in a way, because it isn't always easy to diagnose. However, if you remember that brain abscesses are due to one of three major causes: (1) The infections around the paranasal sinuses and ears; (2) intra-thoracic suppuration; and (3) infection in other parts of the body. If you have a history of infection and then you have evidence of increased intracranial pressure, then you can suspect a brain abscess, and in most cases, with the aid of antibiotic therapy, we get good results.

The most gratifying patients in neurology are spinal cord tumors of the primary kind. They are not infrequent. The diagnosis of that condition depends upon symptoms of root irritation, and in the later stage, of spinal cord compression. The protrusion of the intervertebral disc has been talked about considerably and I shall not go into it.

Perhaps one of the most important diseases that one should detect early, and I assure you it is not detected early, is pernicious anemia. You needn't worry about polyneuritis. But the story is entirely different in pernicious anemia, and when you think that in a medical center such as Philadelphia we get no less than 18 to 20 cripples every year because pernicious anemia is not diagnosed early enough, it is sad.

The diagnosis of pernicious anemia does not depend on neurological findings. It is true that pernicious anemia may begin with neurological findings and that the blood count may be normal. The diagnosis of pernicious anemia depends on vague symptoms, the dysesthesia and parasthesia. We have learned not to depend on the blood count. If I want to be sure that the patient has no pernicious anemia, I at once have a gastric analysis. If there is hydrochloric acid, I don't believe I am dealing with pernicious anemia. If there is no hydrochloric acid, my next step is not only the study of the peripheral blood but a study of the bone marrow. People are brought in ambulances, pale and sometimes not so pale, and make very good progress on an anti-anemic regime.

It is particularly difficult to suspect pernicious anemia when you see an individu[illegible] with a ruddy complexion. One of my residen[illegible] brought his father in a couple of years ago from Washington with very suggestive formication of his hands. I told him I thought his father had pernicious anemia. He thought I was crazy. But the bone marrow was characteristic, and there was no hydrochloric acid. I heard from the son, who is in the Army now, that his father was doing very well. Another six months and he would have been a cripple.

The way to think neurologically is not who described the symptom. The way to think cardiologically is not whether the murmur is of the apex or the base or the back. Nobody gives a darn where the murmur is anyway; it's a question of what that heart is doing. I am talking as an internist now, not as a psychiatrist. Similarly, in neurology, we are not interested in who described the disease. We want to know whether there is evidence of meningeal irritation. Does the patient have something that irritates the meninges? If so, is it blood, is it pus, is it a tumor? Root pains, are just as distinct to us as, let us say, a thrombophlebitis is to an internist. Inequality of tendon reflexes always require an explanation. There must be a reason for it.

Presence of pathological reflexes—I should like to state just briefly that to be a good internist, or a good neurologist, you must not know too many signs. The neurologist who knows too many signs is not a good doctor, because a good doctor hasn't the time to explore all the signs described by people the world over. He limits himself to a few things: the pupils, the biceps and triceps, the Hoffman reflex, the knee, the Babinski. He often doesn't have enough time to do all of them, but he should. You can do even fewer, but do them regularly and you will catch a lot of this.

Evidences of increased intracranial pressure and of local brain disease—he who has a headache for a long time, even if he is a neurotic, should have the benefit of at least one x-ray study.

I should like to emphasize that the most important psychiatric disturbance is depression. I am not trying to take the glory away from Joe Hughes; anxiety is extremely important, so is elation, so is apathy. But emotional depression is something that every physician should be keenly aware of. Depression is not just a word that poets use or psychiatrists use. Depression to the clinician is just as much of an entity as the fever registered by the thermometer or the abdominal tumor that you feel with your hands, or the acute abdomen that you must operate on at once. You must learn to recognize the existence of depression whether you are an internist, a gynecologist, a general surgeon, or even a nose and throat man.

As Dr. Tarumianz discussed earlier, depressions don't have to be pathological. For instance, you and I have normal depressions. Some of you may be depressed listening to me for 18 minutes. That is a normal fluctuation. Then there is the psychoneurotic depression that Dr. Hughes talked about. Then there is the depression that one sees in dementia praecox early in the disease, as a rule, which does not last long enough.

Depression occurs in structural and chemical disease and intoxications. Depressions occur in tumors in the posterior part of the abdomen. That is very important. You don't know whether you are dealing with a neoplasm or dealing with emotion depression.

Then of course there is the manic depressive type, and lastly there is the involution melancholia, which is the most important because it occurs in the involution period of life, 45 to 55 in women, a little older in men. Second, because it hasn't a darn thing to do, so far as we know, with the menopause. It is not cured even by the most expensive products promulgated by the manufacturers. Third, it often begins with a lot of physical complaints. You think the patient is having heart disease or bladder disease or GI disease. You permit him to go on until he gets depressed and often commits suicide. Moreover, it occurs in certain types of individuals, but time doesn't permit me to go on.

It is important to recognize depression. You cannot treat depressions by treating their somatic complaints. You can give them hydrochloric acid, or liver, but it isn't going to do any good. Second, there is always the suicidal possibility. Personally, I wouldn't care if some of my patients would commit suicide — for instance, some of my schizophrenics — but I feel very keenly when a depressed patient commits suicide because most of them become well.

Thirdly, shock treatment is of benefit in the true depressions, in over 80% of the cases. Lastly, when a patient is depressed the ordinary psycho-therapy doesn't do him a bit of good. You can't encourage him, you can't guide him, you will talk to them from now until doomsday about their early life or even about their environmental factors; they will be pepped up for a while but then when they leave you they'll say, "The doctor is a smart guy but he doesn't understand me." And he is about right, because the depressed person lives in a world of his own and he doesn't stand for a lot of nonsense.

To diagnose depression I gave you this outline. There is a family history; and the patient may have had previous mild attacks. He will tell you that he had gastro intestinal disturbance five or ten years ago, was treated for colitis and got well in nine months. He didn't have any colitis to begin with. He had an attack of depression. You exclude the primary somatic structural or chemical disturbances. These patients have no trouble in falling to sleep. They are resistive to sedatives. No matter how much you give them they wake up early anyway. I am speaking of the intramural depressions.

A good many of the mild cases come to you complaining of a bitter taste in the mouth. Most of them say that they work but get no kick out of it; they get no satisfaction out of it; everything is the same.

I know that I am hurrying these things too much, but once you get into the idea of thinking about them you will recognize them. You will be able to treat them better.

Treatment of the emotional depression is to avoid useless surgery. We ought to prevent suicide. Specific treatment is very helpful. Symptomatic treatment is relatively of little use. Of course, you have to see these patients and help them along, but most of the time you don't accomplish anything.

In summary then, I should like to state that if you want to be an up-to-date internist, you have to know certain minimal conditions that I dub as neurological or neuro-psychiatric emergencies. You should think of neurology in terms of syndromes; not in terms of symptoms but in terms of disease. If you do that, you will undoubtedly pick up a great many conditions in cases in whom you can prevent invalidism or even death.

On the psychiatric side, the early recognition of depression and the ability to put it where it belongs is something that every good clinician should be able to do.

1832 Spruce Street.

Discussion

Dr. M. A. Tarumianz (Farnhurst): Mr. President, I can't help but admire Dr. Yaskin, who has had 30 years of teaching and fighting against certain elements, but he still has his courage and his ability to transmit to people that psychiatry is not a psychological problem or psychological science. It is part of medicine, an important branch of medicine. The psychological must go hand in hand with the organic, physical existence of human beings.

I think Dr. Yaskin has many times gone against certain individuals who have a tendency to create among certain physicians the feeling that psychiatrists are an extraordinary group of individuals who have no medical interest or medical knowledge or experience. I think he has given you the importance of neurological emergencies which we see every day, and he has given you the facts pertaining to the importance of depression, manic-depressive psychosis, reactive depression, in many psychoneurotics, involution melancholia cases.

I think depression is one of the most important illnesses in medicine. It isn't called a symptom. Depression is not a symptom, but depression is a disease entity. Thus, he has elaborated on how to recognize the depression and how to treat depression in early stages. Today it is very easy to treat most of the cases of depression. They respond well, and I would say that we have a better prognosis in depression if treated adequately than in any other type of psychiatric problems. Certainly, particularly in the cases of involutional melancholia, they respond to shock treatment, followed by psychotherapy. Very few cases do not respond to treatment. Then a frontal lobotomy is considered.

Dr. George J. Boines (Wilmington): Dr. Yaskin gave us a very complete outline of the neurological emergencies, but I was quite surprised that he didn't mention bulbar poliomyelitis.

In 1934 bulbar polio was hardly recognized. However, I think we know today that bulbar poliomyelitis is an emergency, and the early diagnosis, the early hospitalization and the proper treatment is the thing to do. Diagnosis is not hard to make if one keeps in mind that there are 12 cranial nerves and the parts which they supply from the neck up.

Dr. Yaskin: I am grateful to Dr. Boines for mentioning bulbar polio. I didn't say a word about the aneurysms, which is one of our great acquisitions in the last two decades. Subarachnoid hemorrhages were a lost cause until we began to localize them by arteriograms, and ligate them.

Polio is another example. There are many more advances that have been made. I think if I could stimulate in you the desire to look upon neurology as something living, not something that the other fellow does to amuse himself but something that you can use in your everyday practice, if you do that and integrate it as part of your internal medicine or general medicine, or general surgery, you will find it extremely interesting, if not anything else, possibly something else too.

PITUITARY CRETINISM

Charles William Dunn, M. D.*
Philadelphia, Pa.

In 1944, under the title of Pituitary Myxedema[1] we reported the case histories of five children who had been diagnosed as cretins during infancy and thereafter were treated with thyroid extract. There were 2 male and 3 female children, varying in age from 3½ years to 14 years of age. All of these cretins had been referred to the author because they developed thyrotoxic reactions when thyroid extract was continuously administered at a dosage level which is readily tolerated by the average cretin child of a similar age. Their clinical history throughout the years revealed a consistent intolerance to thyroid extract and a recurrent necessity for interrupted thyroid therapy in order to control the clinical signs of their hypothyrodism or cretinism.

Another notable feature in their clinical history was that in spite of interrupted thyroid therapy they had maintained a degree of mental development which was inconsistent with the very low total amount of thyroid therapy administered and a diagnosis of cretinism.

Their earlier prethyroid treatment pictures showed definite cretinic facial features and enlarged tongue. The early clinical history and the retardation of physical development and mental responses was consistent with cretinism.

In their post-infancy period they began to show aberrations from the usual pattern of the thyroid treated cretin. Mentally, developmentally and in adaptability to their environment and in their ability to be trained; their accomplishments were superior to those of a thyroid treated cretin having a primary thyroid deficiency.

The general clinical picture presented by these five children was more a combination of pituitary infantalism, pan-hypopituitarism type; and a post-thyroidectomy myxedema or the thiouracil induced type of myxedema and not that of thyroid cretinism. Thyroid therapy when initially administered had promptly effected, in fact almost erased; the facial features of the cretinism and after thyroid therapy the child had normal facial features and expression.

In fact these differentiations between the true thyroid cretin and the group of children diagnosed as pituitary cretinism was so much in evidence that the mother of the first case observed a 14 year old female child; had noted these observations. Because she had made these observations in her own child, she investigated the clinical history of numerous other cretin children and discussed the clinical history with the parents of these cretin children and failed to find these differences in other cretins. Thus, the mother withheld all information concerning the original diagnosis of cretinism in her child at age 1½ years and merely stated that the patient had required and received thyroid therapy chiefly to resolve the chronic stages of an infection; that she did not tolerate prolonged thyroid therapy nor had it aided her physical or genital development. During the past few years on the advice of her physician she had received practically no thyroid therapy. During this three year period no progress in statural growth or genital development occurred.

On the basis of the type of retarded growth and genital development at age 14 years, the signs of secondary hypothyroidism commonly seen in panhypopituitarism, but present here to a greater degree than usually observed; a provisional diagnosis of pituitary infantalism and chronic pituitary myxedema probably due to a pituitary cyst was made. A complete x-ray study of the skull, sella turcica and osseous system was ordered, also blood cholesterol and blood studies. Only until this provisional diagnosis was made and reinvestigation ordered did the mother reveal that cretinism had been diagnosed and frequently confirmed since age 1½ years.

---

*Associate Professor of Medicine, Graduate School of Medicine, University of Pennsylvania; Consulting Endocrinologist, Delaware State Hospital, Delaware Hospital.

The x-rays revealed that an enlarged, adult sized sella turcica was present and the general osseous pattern corresponded to that observed in a primary anterior pituitary lesion more than that observed in a primary thyroid lesion present during childhood. The B. M. R. was minus 16 and the blood cholesterol was 220 mg. per 100 cc of blood.

We also noted that this patient did not present what we designate as the retarded signs of foetal development which are consistently observed in thyroid cretinism. We consider these characteristic cretinic features to be: a persistent and measurable degree of mental defect at all ages, the harsh and characteristic cretinic voice tone, the deficient osseous formation and dental developmental growth pattern of cretinism, the tegumental abnormalities and the lustreless and coarse hair; the excessive persistence of lanugous hair; the hypotonia and deficient musculature; the umbilical hernia and potbelly and the absence of palpable thyroid tissue or degenerative thyroid pathology.

The clinical features and x-ray findings of pituitary cretinism as described herein have been observed and confirmed in two more cases, both females, one at age 10½ years and the other in a female age 58 years. Both individuals had been diagnosed as cretins during infancy, and both patients have experienced the same intolerance to and thyrotoxic reaction from continued thyroid therapy and lack of developmental response when treated with thyroid extract.

This report concerns only the 10½ year old female child with a hospital record and diagnosis of cretinism dating back to age 5 years. Our purpose is to give further evidence of the clinical entity of pituitary cretinism and to substantiate the therapeutic results stated in our original report of 1944.

The sixth case of pituitary cretinism was first examined at age 10½ years at the Endocrine Clinic of the Delaware Hospital, Wilmington. A diagnosis of cretinism had been made at age 1½ years. The chief complaints at age 5½ years were: retarded physical and growth development, mental and physical sluggishness, thin scalp hair and scaling of the skin in general. The child played alone for hours, was non-irritable and "drags along." Enuresis and constipation persist. Weight 34 pounds and height 37 inches.

A diagnosis of cretinism was made and thyroid extract 1½ grains daily in divided doses was prescribed. Within 3 weeks thyrotoxic symptoms were observed. Thyroid was reduced to 1 grain daily. After a short period of time intolerance for this dosage and thyrotoxic symptoms again developed. Eventually because of extreme nervousness, overactivity and weight loss, thyroid therapy would have to be discontinued until the sluggishness and puffiness of the face reappeared. Therapy would be resumed and continued until physical appearance improved and sluggishness disappeared.

At age 8 years marked lordosis and slight scoliosis developed. X-ray studies at this time showed a bone age of 4 years. Again the diagnosis of cretinism was confirmed.

On October 25, 1946, the patient was referred to the Endocrine Clinic, and examined by the author.

Summary of Clinical History. The preceding clinical history was confirmed. Diagnosis of cretinism at age 1½ years, retardation of physical and mental growth, recurrent enuresis, gastro-intestinal disturbance, mental and physical sluggishness, delayed eruption of teeth and general hypotonia since infancy. Delay in walking until age 3 years and difficult speech until age 6 years. Persistence of mental sluggishness, retardation of general physical development and retarded growth.

The child had entered school but her progress was poor and she required special class training. She was unable to maintain scholastic advancement in her age group.

At age 5½ years; 1½ grains of thyroid produced toxic reaction within three weeks. Since age 1½ years the patient had received thyroid extract for her "gland trouble" but had shown little improvement from the treatment.

Response to thyroid therapy up to age 10½ years: The patient responded favorably to thyroid extract, orally administered, grain ½ twice a day, however, continuation of this dosage produced thyrotoxic reactions and thyroid therapy would have to be interrupted. Discontinuing thyroid therapy brought about physical and mental sluggishness, anorexia, constipation and a more sluggish state of development.

Physical Examination. The responses, attitude and general appearance of the child were distinctly immature.

Height: 45¼''. Lower measurements: 21''. Span: 45½''. The physical examination revealed a female child, age 10½ years, with retarded growth and general physical development. She was shy, the facial appearance was immature but non-cretinic, the scalp hair was dark and lustreless. The skin had a chloratic tinge and was dry. The subcutaneous tissue was increased. The eyes were bright and the eyelids were non-puffy. The teeth were small, the incisors were boxy in shape with increased spacing. The tongue was not enlarged. The thyroid was palpable but very small. The subcutaneous tissue of the chest wall was increased. The heart rate was a slow normal, no murmurs. The lungs were normal.

Abdomen: pot belly; no umbilical hernia present.

Extremities: diminished lower measurement. The musculature was moderately developed.

Primary and secondary sex characteristics: external labia underdeveloped for age 10½ years, no pubic hair. Breast development: areola and nipple developed. No breast tissue felt in fatty deposit.

The pattern of developmental retardation which was apparent at age 1½ and had persisted to date; the scholastic record though deficient was above that of a cretin; the sensitivity to thyroid therapy, and its lack of stimulative action on statural development and the adequate effects on mental sluggishness along with the absence of "signs of retarded foetal development" such as are evident in thyroid cretinism and a small thyroid gland indicated a primary anterior pituitary pathology and a secondary thyroid deficiency state which we have designated as pituitary cretinism or myxedema.

X-ray report October 25, 1946, age 10½ years. X-rays skull, hips, knees, wrists. Examination of the skull shows the walls of the calvarium normal. The sella turcica measures 10 mm. in depth and 13 mm. in length. This is larger than is normally found in a child of this age and may be significant. Both hips and pelvis, right and left knees appear normal. The bones of both hands show no evidence of pathological change although there is some retardation in the maturation of the bones of the hands and wrists. The bones of both wrists appear to be of a bone age of about six years and nine months, with a retardation of bone growth by about three years and nine months.

December 27, 1946, blood cholesterol 362.

The retarded growth and genital developmental pattern of the pituitary infantalism, the grade and type of secondary hypothyroidism described in the text and the enlarged sella turcica indicated the primary endocrine pathology was pituitary in origin and the diagnosis was pituitary cretinism.

Endocrine therapy was instituted in January of 1947 as follows: "Armour" anterior pituitary extract, gr. 1; thyroxin 0.15 mg.; calcium glycerophosphate, gr. 3; twice a day.

On this therapy she became alert and active. In two months the dosage was reduced to one capsule daily because of nervousness. After 6 months of therapy her weight was 58 pounds and her height was 47¾''. After one year of the above therapy one capsule and two capsules a day on alternate months, she weighed 67½ pounds and was 49'' tall. A total gain in height of 3¾'' for 1 year.

She had worn a size 6 dress for at least 3 years and now required a size 9 dress. Her breasts were beginning to develop. She was more alert, active and had wider interests. Her facial expression was more mature and she was less shy and more assured in herself. Her scholastic work had markedly improved.

After 1½ years of therapy her weight was 63 pounds and she was 49¾'' tall. She was advanced in school and was manifesting a more general outside and home interest.

After 2 years of therapy weight was 68 pounds and height 50½''. Breast development advanced. The dosage of thyroxin was reduced to 0.1 mg. twice a day because of the improved clinical state and the now normal age osseous development. X-ray study at age 12½ years showed osseous age of 12-13 years.

The total gain in height and weight was as follows:

	height gain	weight
After 2 years of therapy	5-¼"	68 pounds
After 3 years of therapy	8"	81 pounds
After 4 years of therapy	10-¼"	94 pounds
After 4-½ years of therapy	10-¾"	95 pounds

The menarche occurred 3 years and 11 months after instituting therapy and during this period the breasts developed to normal. After the onset of the menarche, anterior pituitary was discontinued but was resumed 2 months later because the patient's mother stated she was not doing so well with only thyroxin 0.2 mg. daily. Two months later the second menses appeared on April 9, 1951. The physical and mental energy improved.

April 20, 1951—X-rays: skull, hips, wrists. Examination of the skull shows a slight increase in the size of the sella turcica. The area being approximately 125 mm. as compared with a top normal of approximately 85 square mm. for a child of this age. There is a slight retardation in the development of the bones of the wrist.

April 20, 1951—R. B. C. 3,000,000 Hb. 68% —10.6 gms. Blood cholesterol 208 mg.

The clinical response to the continued oral administration of anterior pituitary, thyroxin and calcium glycerophosphate in this case of pituitary cretinism was a stimulation of growth and genital development. The therapeutic results previously reported in five cases of pituitary cretinism were substantiated in this case.

A total gain of 10¼ inches in height resulted from 4 years of anterior pituitary-thyroxin-calcium oral therapy in a child who had exhibited practically cessation of growth for a period of three years. Genital growth development, equally retarded, had been advanced to normal, with the appearance of the menarche on or about the normal time. This result equals that obtained in Case I of the original report. The scholastic history of the patient is of interest. Following are excerpts from her school report:

"Since 1941 at age 6 years, C. M. had spent three years of unsuccessful work in school. She simply could not conform to the routine of a regular classroom.

In September 1944, she rated 76 on the Stanford-Binet test. She was placed in an opportunity class where she remained three years. During this time through many experiences she developed an understanding of formal reading and its meaning. Her muscular control showed a very encouraging development in handwriting. She learned to write numbers to 100.

In September 1947, (after ½ year therapy) she was placed in a regular second grade class where she adjusted well to the routine of regular class work. She was more dependable than the average second grader. She read seven books on first and second grade level. She developed good handwriting. Interest in music began.

She made average progress the following year in the third grade. She read seven readers on second and third grade level. She was good in spelling and written work. She improved in arithmetic and learned to apply simple multiplication and division facts in problem work. In November 1948, she rated 64 on the Kuhlmann-Anderson Group test.

In 1950 (after 3 years of therapy) her work shows steady progress in the fourth grade. Reads with fair ease and understanding from the easier fourth grade material. Has very little trouble with studied or applied spelling. Good handwriting with good muscular control. Knows the harder number combinations and can apply them fairly well in fourth grade problems.

According to the Iowa Basic Skills Achievement tests her scores were:

	September 1949	May 1950
Reading comprehension	2.4	3.6
Reading vocabulary	2.1	3.4
Arithmetic fundamentals	3.9	4.2
Arithmetic reasoning	3.0	3.8
Language	3.4	3.9

Reported by teacher."

Following are excerpts from examinations at Mental Hygiene Clinic, Delaware State Hospital:

"C. M. was first tested at the Mental Hygiene Clinic when she was three years and six months old, which was about eight years ago. At that time she was considered mentally definitely retarded, but probably not deficient; as at least of borderline intelligence. She is an 11 year old girl but looks more like a seven year old in body size. She is friendly, expressive and cooperative child. She responds readily. She rates low average in mastery of the mechanics of language; and her vocabulary is inferior. In the fundamental school subjects, she is seriously retarded for her age level. She has low average intelligence. In reading, spelling, and arithmetic, she is seriously retarded for her age."

Following are exerpts from examination in Mental Hygiene Clinic, Delaware State Hospital, March 6, 1950:

"C. M. is an attractively featured girl of small stature. She is cooperative and attentive. Her ability to distinguish between degrees of accuracy of her actions is impaired. She is alert and sociable. She is consistently retarded in all mental functions. Her general level is not, however, defective. She is of low average intelligence. She has done as well as can be expected from her capacity."

Conclusion. The differential diagnosis of pituitary cretinism from thyroid cretinism is now required because of:

1) The greater degree of physical, sexual, mental, social and economic development obtainable in pituitary cretinism from adequate anterior pituitary and thyroid therapy as compared with thyroid therapy alone in pituitary cretinism and thyroid cretinism.

2) X-ray investigation of the size of the sella turcica should be made in all cretins. The enlarged sella turcica combined with the clinical features of pituitary infantalism and myxedema and a mental development above the level of the average cretin indicates the presence of pituitary cretinism. The signs of retarded foetal development usually present in thyroid cretinism are not found in pituitary cretinism.

3) In pituitary cretinism the cretinic facies and other constitutional and functional signs of severe hypothyroidism is the result of an anterior pituitary thyrotropic deficiency.

4) The continuous and required dosage of thyroid extract which is well tolerated by the thyroid cretin produces thyrotoxic reactions in pituitary cretinism. This reaction appears to be characteristic of the pituitary cretin since it has been observed in all seven cases observed by the author. Lerman and Stebbins[2] have reported that the administration of thyroid extract to cases of adult pituitary myxedema precipitates fatal attack of unsuspected adrenal cortical failure.

5) The primary endocrine pathology in pituitary cretinism is in the anterior lobe of the pituitary gland. The thyroid gland is non-pathological. Its secreting cells are small but functionally dormant. They are not being stimulated by the anterior thyrotropic factor. The primary pathology in thyroid cretinism is in the thyroid gland or the result of its absence. There is no deficiency of anterior pituitary thyrotropic factor in thyroid cretinism.

6) The anterior pituitary pathology is presumed to be a cystic lesion because of equal expansion of the diameters and the non-eroded appearance of the sella turcica.

Summary. A sixth case of pituitary cretinism and the therapeutic results of 4½ years administration of oral anterior pituitary, thyroxin and calcium glycerophosphate to a female child age 10½ years is reported. The importance of differentiating pituitary cretinism from thyroid cretinism has been discussed.

265 South 19th Street.

REFERENCES

1. Dunn, C. W.: Pituitary Myxedema, Med. Clin. N. A., Nov. 1944, p. 1386.
2. Lerman, J. and Stebbins, H. D.: The Pituitary Type of Myxedema, J.A.M.A., 5: 391 (May 30) 1942.

EPILEPSY AND CONVULSIVE DISORDERS AS SEEN IN THE SEIZURE UNIT OF THE GOVERNOR BACON HEALTH CENTER

Joseph Hughes, M. D., Roy Read, M. D.,
Hazel Madry, M. S. W. and
Irene Nowland, R. N.
Farnhurst, Del.

Epilepsy results from brain damage. The convulsive seizure represents the mass firing of cortical neurones in response to a focus of irritability. Infections, trauma, degenerative lesions, biochemical abnormalities or congenital defects can set up trigger zones for the seizure. Heredity plays a decreasing role of importance and at present the hereditary role is conceded to be that of transmitting only a susceptibility for seizures.

Epilepsy involves three to five patients per thousand in the general population. On the other hand as many as fifty per thousand suffer, at one time or another, a convulsive seizure in their lifetime.

The seizure control unit of the Governor Bacon Health Center has been functioning since March 1949. Since that date 620 patients have been examined for epilepsy. Each of these patients was screened electroencephalographically. 92 patients of this group were hospitalized for additional diagnostic procedures and treatment. The unit provides both diagnostic and treatment facilities for residents of Delaware who are subjected to convulsive disorders. Patients are referred to the Center by their own physician or by other hospitals. Public Health Agencies, the Courts and Rehabilitation Centers. Neurological, psychiatric, psychological and electroencephalographic examinations are made on each patient. The nursing care is directed towards rehabilitation and includes training each patient in the appreciation of his own needs in terms of suppressive therapy and other medication or corrective procedures. Social service appraisal of the home situation and the problems growing out of the patient's illness serves as the basis of bringing knowledge and understanding of epilepsy both to the family and to the patient so that healthy attitudes towards the patient's seizures may prevail on his discharge home. While at the Center patients of school age are carried on an educational and/or vocational training program so that their schooling will not suffer through hospitalization.

In the group of 620 patients studied to date grand mal seizures with generalized electroencephalographic abnormalities were seen in 540 patients. Petit mal seizures were seen in 37 patients. These showed typical three per second spike and wave patterns in the electroencephalogram; focal electroencephalographic abnormalities were also noted in 43 patients. All of these patients benefited from suppressive medication directed in sufficient dosage to control the seizures. Those patients whose seizures were alleviated always reflected this clinical improvement by a parallel improvement in the electroencephalogram. It necessarily follows that those least improved were those patients who had the most extensive brain damage. Most of this group of patients were likewise handicapped by severe mental deficiency on an organic basis. Suppressive therapy has included the use of phenobarbital, dilantin, thiantoin, tridione, paradione, phenurone and hibicon. The last mentioned drug being a new anticonvulsant. In general grand mal was best controlled with dilantin and phenobarbital; petit mal with tridione or paradione and phenobarbital and psychomotor states with dilantin or thiantoin or phenurone and phenobarbital. Phenurone should be used with care because of reactions. There were no notable toxic reactions from any of the anticonvulsants used in this series. The explanation for this lies in the close supervision which all patients receive while under treatment.

The Seizure Control Unit has as its policy the maintenance of very close relationship with the family, the referring physician and the social agencies of the community. The goal of therapy may be stated as the control of seizures and the return of patients to their respective families where treatment may be either continued by the referring physician or if desired as an out patient of the Governor Bacon Health Center.

PSYCHOTHERAPY CONFERENCES AT GOVERNOR BACON HEALTH CENTER

Earl A. Loomis, Jr., M. D.*
Philadelphia, Pa.

The Governor Bacon Health Center stands in a unique relation to the state of Delaware and each community therein. It provides a setting for prophylactic and remedial management of organic and functional disturbances of intellectual performance, learning, speech, reading, writing, and emotional maturation. The disturbed or handicapped child can be exposed there to diagnostic and therapeutic procedures administered by a coordinated team of specialists in all branches of medicine and the sciences of human behavior applicable to the patient's disorder. Not the least of the functions of Governor Bacon Health Center is the provision for individual and group psychotherapy. It was with a view to learning, sharing, and enhancing the techniques of psychotherapy with children that the psychotherapy seminars were established. Now, at the beginning of their second year, their efforts and achievements can be summarized.

---

*Consultant, Governor Bacon Health Center.

Established for the training of the full psychiatric team, the seminars were attended by members of the psychiatric, psychological, and social work staffs. In addition specialized teachers, occupational therapists, and chaplains attended. The training and orientation of the participants varied from those having their initial exposure to clinical psychotherapeutic techniques (as in the case of some of the psychology and social work interns) to fully qualified child psychiatrists, psychologists, and psychiatric social workers, some of whom were undertaking personal psychoanalysis. Meetings were held once weekly. and on the whole attendance was faithful and consistent.

The plan of the seminars usually included one session for group psychotherapy for the presentation of material from the literature and one session for supervision of a case carried in individual psychotherapy. The latter was along lines similar to the continuous case seminars of psychoanalytic institutes.

Group psychotherapy was undertaken by quite a number of individuals, including members of each of the disciplines mentioned above. Membership in the groups included children as young as seven to ten years of age and as old as fourteen to sixteen years of age. The groups consisted of six to ten children. The approach in each group varied, being adapted both to the needs and preferences of the children and to the training and temperament of the therapist. Most groups contained both neurotic and acting-out children. One group contained physically handicapped children. The therapists' approach varied from sports and crafts activities to a quite directly interpretive psychodynamic technique. Therapists were given a great deal of freedom in both the completion and the handling of their groups and were encouraged to adopt and devise techniques consistent with their own preference and capabilities.

During the individual psychotherapy continuous case seminars, one case was followed throughout the entire year. It was presented at first by a psychiatric social worker and later by a child psychiatrist when the case was transferred because of the departure of the earlier therapist. The work throughout the year was of a high caliber and reflected luminous insight and warm human understanding. It was stimulating to observe the maturation of the therapists and other participants as they shared ideas and sought together the solution of many dark mysteries.

The general discussions and presentations from the literature revolved around topics germane to the institution: the psychodynamics of delinquency, the neuroses of childhood, the institutional management of children who are ill in body and mind, the various techniques of psychotherapy, the handling of the feelings of the child for the therapist and the therapist's feelings for the child, the contagiousness of anxiety.

The function of the consultant was to moderate at the meetings, encourage discussion, and at times assist in dynamic formulation or therapeutic planning. His role was a pleasant one, due to the acumen and good will of the staff. Looking backward and then forward, I am convinced that Governor Bacon Health Center deserves to continue its growth and to extend further into the community a knowledge of its function and techniques in order that each of the citizens of Delaware may ultimately benefit, directly or indirectly, from the scientific and warmly sympathetic attitudes toward children and child rearing which are expressed in the work of the Center.

STUDY OF A SCHIZOPHRENIC FAMILY

F. A. Freyhan, M. D.*
Farnhurst, Del.

The Delaware State Hospital offers a unique opportunity for psychiatric family studies. It is the only mental hospital in a small state, has, consequently, a substantial number of closely related persons among its patients. This clinical material, consisting not only of patients now at the hospital, but including those who had been patients in the past, or were seen at the Mental Hygiene Clinic for a variety of personality disorders which did not require hospitalization, constitutes an exceptionally rich source for investigations of psychologic, sociologic and cultural aspects of mental illness.

The following report acquaints us with a family whose life struggles are far from being ordinary. The family history, in as far as psychiatric aspects are concerned, begins in Poland, continues in the United States, but has a special chapter which reveals the chaotic conditions brought about by the political events of World War II.

---

*Clinical Director, Delaware State Hospital.

We shall let this story unfold in the chronologic fashion in which the persons involved came to the attention of the Delaware State Hospital:

1. Stella M., 18 years old, entered the Delaware State Hospital on August 6, 1930. About a week prior to admission, Stella had become strangely self-absorbed, had refused food and talked of religious visions. Her inner experiences had excited her to the point of psychotic ecstasy, so that hospitalization became a necessity. The family investigation carried out by the Social Service Department at the time of Stella's admission reveals the following pertinent facts:

Stella's parents are Polish immigrants who came to the United States in 1913. Unfortunate circumstances forced the family to split: Two of the four daughters, including Stella, were brought to this country, whereas two were left behind with relatives where they remained. Life in this country fell short of expectations. The father, always a poor provider, worked only irregularly, drank to excess and served two terms in the Workhouse. He was described as an aloof person who showed little affection or interest for his family. He died in 1929 of heart disease. The mother depended on help from charity organizations as she could not contribute to the support of the family because of chronic disabling rheumatism. Her own mother and a maternal uncle had been mentally ill. Both had suffered from a chronic disease which she described as "similar" but about which she could give no further information. Her mother had always been cared for at home but her uncle spent his life in an institution somewhere in Poland where he died at an early age.

Stella had always been a quiet child who helped at home and seemed rather ambitious. Her physical development had been normal. She attended school until she was 15 years old, then went to work in a jute mill and later in a laundry. She apparently was well liked in the neighborhood and devoted much of her own time to church work. About a month before admission, she felt disturbed by the attention of a man whom she disliked but feared. She was afraid to get rid of him as she suspected that he would harm her if completely rejected. Soon after this episode, she became increasingly religious, spoke of entering a convent and spent entire days praying in church. She then refused food at home, explaining "There is dirt in it," and spoke with some elation of "seeing God." At the time of admission, she was in a state of religious ecstasy, saw a "brightly illuminated cross in the sky" and demanded "the Testament should be written in red blood." Within a few weeks, these experiences faded away, she became calm and developed some doubt regarding the reality of her visions. A few months later she seemed well enough to return to her home and job. For about three years she worked regularly and gave the impression of being quite well adjusted. Ever so often, however, she complained that men molested her. These stories appeared exaggerated, if not fabricated, to those who investigated them. In the fall of 1934 ideas of sexual assault became so dominant, her accusations so bizarre, that hospitalization became again necessary. Mental examination on readmission revealed her to be extensively delusional, withdrawn and obsessed with sexual fears ("I do not want to be anybody's naked woman.") She became progressively more passive, displayed extreme hostility and suspiciousness, frequently attacked people who disturbed her in her desired isolation.

The subsequent clinical course has been one of complete stagnation. Neither insulin coma therapy, electroshock treatments or occupational efforts have had any significant effects on her attitude. She presents today the picture of a deteriorated schizophrenic individual who is emotionally blunt, has no outward interests, shows manneristic behavior and becomes frequently assaultive. She has not left the hospital since 1934.

2. Kathryn M., 43 years old, was admitted to the Delaware State Hospital on October 16, 1950. Kathryn is one of the two sisters who was left in Poland. At the time of the departure of her parents she was 9 years old.

She was born November 15, 1905 and, in the estimation of the mother, seemed somewhat retarded in her mental development. The mother remembered her as "a sickly baby" who was slow to learn and did not go to school before the age of 8. Very little is known about her life after she was given over to relatives. Her family had lost contact with her after the Germans invaded Poland. We know today that during the war years she was compelled to work in labor camps. At the end of the war she became a displaced person and spent several years in a D. P. camp in Germany where she was finally located by her family. An immigration visa was secured which enabled her and her six year old illegitimate daughter to enter the United States in 1949.

In her mother's home she appeared neither happy nor capable of making any plans for her future. She expressed resentment and bitterness toward her family for having been left in Poland and been exposed to bitter experiences. The family noted that she drank considerably, neglected her appearance and became increasingly morose and irritable. Questions concerning the paternity of her child led to heated arguments and mutual accusations. After three months she left the mother's home, went to the police and accused her family of mistreating her. Social agencies came to her assistance and found her a housekeeping job with a friendly couple who spoke her language. At first, Kathryn seemed happy, contented and began to make plans for her future. A few months later, however, she complained of mistreatment and again became morose and hostile. Her employer, as well as his neighbors, stated that they were afraid of her because "she ranted, raved and threatened to use the butcher knife on various occasions." Representatives of a social agency investigated, found her mentally disturbed and had her committed to the Delaware State Hospital.

When first seen at the hospital she was agitated and depressed. She paced the floor, restlessly, trembling and mumbling over and over again that her girl had been killed by her family or that she herself had burned her child. Marked psychomotor restlessness persisted until she had been given several electroshock treatments. Hereafter she became calm but there was no apparent change in her ideation. Attempts to reassure her failed. Within a short time she again became upset, attacked nurses and attendants on frequent occasions and displayed hate toward everybody in her environment. Feeling trapped, she tried to get out by offering pennies to the attendant.

While it was assumed at first that she suffered from an affective disorder which would respond favorably to therapy, further developments altered the clinical picture. Paranoid behavior, persistent agitation and negativism (refusal to eat or participate in any ward activity) dominated in spite of repeated courses of electroshock therapy, hydrotherapy and various types of sedation. It became necessary to transfer her to a disturbed ward since she screamed and yelled, often for many hours, without letup, especially at night and often in spite of heavy sedation. Actually, Kathryn acquired the reputation of being one of the most persistently disturbed patients in the hospital. There has been no change in this pattern since admission. At the time of this writing, patient is being prepared for a transorbital lobotomy which constitutes the last therapeutic resort after everything else has failed.

3. Peter M., 35 years old, was admitted to the Delaware State Hospital on July 13, 1951. The city police complained that this patient repeatedly made a nuisance of himself by interfering with street traffic. He had developed the habit of standing on busy street corners, reading from his Bible and preaching to the public.

Peter was born in Wilmington, Delaware, in June, 1916. He completed the 8th grade in school, then took vocational training to become a machinist. Although he was eager and intelligent, he could not make a satisfactory vocational adjustment. He held many jobs but never kept them for any length of time. He served time in a CCC camp and three years in the Army where he apparently made a satisfactory adjustment. Following the war, he managed to support himself but did not have any steady jobs.

Although he mixed well with people, he gave the impression of being bashful, quiet and self-centered. His interests included reading,

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

sports, poolrooms and automobiles. Women did not seem to attract him.

In 1939 he came for the first time to the attention of the Mental Hygiene Clinic where he had been referred for mental examination from the Workhouse authorities. (He served a term for larceny.) The examining psychiatrist described him as a man of "strong convictions" regarding social and religious issues. He did not care to speak about his arrest, explaining: "I only want to look ahead. Anybody that thinks about his mistakes will go nuts." With regard to his family, he made it quite plain that he believed his sister, Stella, then a patient at the Delaware State Hospital, to be sane and entitled to her own religious beliefs. Concerning himself, he did not knew of any personal problems and presented himself as a self-sufficient and independent person. The psychiatrist stated that he found this patient to be "pre-psychotic" and he recommended regular visits to the clinic for further study and therapy.

During the following years Peter was seen in court on numerous occasions. His record includes charges of assault and battery on his mother, later on his wife, and recently his niece (the 7 year old girl of Kathryn). Also recently, there was a charge of breach of peace for "directing traffic at a street corner and mouthing some religious jumbo." He married in August, 1950 but separated in December. His wife was married previously and had a child by him before she obtained the divorce. His wife found him to be quite peculiar. He refused to shave or have his hair cut because "it would please the Jewish." He was obsessed with anti-Semitic thoughts. Several times he told her that he felt "possessed by Jesus" whom he tried to get out of his brain by falling to the floor, screaming that his soul was agonized.

When admitted he presented a somewhat peculiar appearance because of his fully-grown beard and the long, curly hair. He spoke with some reluctance and discussed his situation with an artificial air of superiority. Since he had recently been arrested for having beaten his niece with a leather strap, he assumed that this was the reason for his commitment. When questioned about this incident, he defended his action quite determinedly, stating "I will beat her again until she has a bloody behind." It seems that he suspected her of showing some sexual interests and, therefore, felt that a severe punishment was indicated. Concerning his religious ideas he did not offer any spontaneous comments. He went to the ward with the dignity of an unrecognized prophet. Once on the ward his attitude became openly hostile. He threatened to kill anyone who would subject him to examinations or treatments. There was no doubt in his mind that all doctors were Jews, criminals without a conscience who would kill patients at will. In spite of his immense hostility towards the doctors he nevertheless resumed his conversations as he seemed anxious to proclaim his ideas. While he remained most reluctant to talk about religious matters, some of his remarks suggested the presence of auditory hallucinations (conversations with God). Religious matters constituted "personal problems" which he did not care to discuss. He preferred speaking about exposing the physicians and sacrificing himself for the sake of the other patients at the hospital.

A few days later he felt sure that he would not be killed and talked in a more amiable fashion. For the sake of brevity, some informative quotations shall follow: "We are a very stubborn family and have a will of our own. I hate any form of compulsion, prefer loafing to taking orders, that is why I did not like it in school. I wanted my freedom. I hit my sister with a strap, hit her on the head until she became silent. That is where she should have sense and that is where I would hit her again. I am not a lady's man, never was. I did not love my wife when I married her. She asked me to get married. When we went to the priest I actually cried but she laughed because I cried." Questioned about his hair and beard: "A few years ago I looked at my picture and felt ashamed, something looked wrong, seemed missing." Asked whether he likened himself to Samson, he replied smilingly "Could be. I look more like a man this way."

COMMENT

A psychiatric evaluation of these siblings must be sufficiently broad to include familial and individual aspects. Family studies of this kind have the methodologic advantage of widening the clinical perspectives to a point where we can differentiate personality features which are unique from those which have generic roots. We find in the history of this family an impressive aggregate of genetic, psychodynamic and social data which emerge here in the light of both: their significance and their limitations. An assessment of genetic-characterologic factors provides some important information. On the mother's side there is mental illness in two generations, probably schizophrenic in nature, in view of the description of "similarity" of the disease. The father's personality shows certain traits, most frequently seen in the so-called schizoid or psychopathic person: aloofness, lack of drive and affection. We thus find a positive background for the specific predisposition as postulated by Kallmann and others. While it is no longer believed that a psychosis per se can be inherited, there is cumulative evidence of an existing genetic capacity (predisposition) for reacting to certain life situations with a schizophrenic type of psychosis.

M. Bleuler (Zurich, Switzerland) who investigates the clinical material of 700 schizophrenic patients and their 15,000 relatives, emphasizes the diversity of characterologic dispositions encountered in these families. He finds prevalence of certain traits and vulnerabilities regarding selective life situations which seem to be related to the schizophrenic psychoses in a given family group. Our family may conceivably fit into such a concept. We find a prominent representation of such traits as stubbornness, suspiciousness and self-centeredness, and there appears to be a singular lack of ability to adjust harmoniously to sex and religion.

Onset, course and type of psychosis present interesting differences. In the case of Stella, one recognizes the rather classical form of schizophrenia which shows the postulated characteristics of a "process-psychosis." Her personality deviates very early in life into autistic isolation which precludes further maturation. Her withdrawal appears final and therapeutic approaches cannot alter her condition. Kathryn, about whose personality we know very little, is already past 40 at the time of onset. Though affective elements seem dominant at first, we find a firm resistance to therapy and emergence of fixed delusions, followed by withdrawal into paranoid isolation. Peter, the most intelligent of the three, develops early into a determined individualist and comes closest to the schizoid personality type. In his case we are confronted with the dilemma of delineating personality and psychosis. Here is no "break," no definable onset of a process. Peter has not lost contact with society though relations have to be on his terms. He can be fanatic, cold and cruel when his convictions drive him, or be submissive, tearful and suffering when in painful conflict. His delusions and peculiarities are deeply ingrained parts of his total personality and he, therefore, offers poor prospects for therapeutic endeavors.

Had we only one or the other sibling to deal with there would be a great deal of temptation to construct psychodynamic connections between the individual life situation and the psychosis. However, no satisfactory answer can be found in the elaboration of psychoreactive elements without the assumption of a specific predisposition as we look at the family as a whole. While it would seem relatively plausible to "explain" Kathryn's breakdown in terms of a series of traumatic experiences, beginning with parental rejection, those would hardly suffice to account for the peculiar malignancy of her psychosis.

This report cannot provide solutions to unsolved problems but it may stimulate interest in the research — potentialities of psychiatric family studies.

SURGICAL INTERVENTION IN COMBINED PHYSICAL STERILITY AND PSYCHIC IMPOTENCE

A Case Report

Harry S. Howard, M. D.*
Farnhurst, Del.

Freud once referred to pedaphilia as the perversion of "weak and impotent persons." This concept, of course, refers to the psychologically weak or impotent characters and the terms "castrated," "feminine," "immature," etc., used in discussing them refer to this psychologic impotence.

While the layman has certain concepts of the physical development which he relates, (rightly or wrongly) to the sexual deviate, the medical profession does not accept this relatedness, so that physical factors are sometimes overlooked. Almost any experienced psychiatrist or physician can recall cases in which the voyeur or exhibitionist will recall derogatory remarks about his physical growth, his walk or his genital development.

---

*Clinical Director, Mental Hygiene Clinic, Delaware State Hospital.

However, it cannot be said that the patient does not see these physical inadequacies and does not suffer as a result of them. The patient is, after all, a layman.

The case of H. D. reveals a fortunate result from a recognition of this factor. H. D. is a white 29 year old male, seen at the Mental Hygiene Clinic at the request of a court after having been arrested on a charge of "lasciviously toying with a (6 year old) female minor."

Physical and neurologic examination revealed him to be of asthenic habitus, with a slight facial tic. He blushed easily, spoke in a barely audible voice but otherwise revealed no physical pathology. Careful questioning brought out the fact that he had had a Neisserian infection prior to marriage, that he had been married several years, and that about a year prior to the time the patient was seen his wife's failure to conceive had been traced to his failure to produce "an adequate sperm count."

That there were many psychologic trauma which contributed significantly to his "feminine" personality development cannot be doubted. His mother had been psychotic through much of his early childhood and adolescence (he wondered whether this could be inherited and whether he ought to go out with girls). His father, trying to fill the roles of both mother and father, failed to provide adequately in either role and certainly did not provide a very satisfactory object with whom he could identify. The patient himself had been enuretic until almost ten years old.

His wife, constantly desirous of children, pointed a scornful finger at his lack of "masculinity" and rejected his advances to her. Because of his conflict his sexual demands on her were at times excessive, childlike and unsatisfactory. In short, all of his previous conflicts and inadequacies were represented by his physical inability to give his wife a child. The desperation of his situation is well seen in his confession to the therapist that he had frequently thought of divorcing his wife, or of "letting her run" (with other men).

At the time of his arrest he had just undergone a vasotomy with presumably a reconstructive procedure in the vas deferens and in his initial interview made the following statement:

"Since my operation I've had no desire for kids. Everything has changed. Before that my wife was cold to me, nagging me about kids, resisting my sexual advances. Maybe that's why I turned — to children, etc."

Shortly after this his wife conceived. The patient characterized this as "a return of his masculinity." He was no longer subject to the jibes of his fellow workers. "He didn't have to prove his masculinity." Also he was able to criticize his wife's appearance and skill as a housewife — something which he had never allowed himself to do before. Also he found himself less anxious in his sexual approach to his wife and found more satisfaction in his sex life.

There can be little doubt that this young man had psychologic insults with damaging effects prior to the onset of the physical sterility. Nor can there be much doubt that this discovery of the sterility and his wife's subsequent reaction added much to his loss of self esteem. The important factor here is that the treatment of the physical factor facilitated his acceptance and understanding of the psychologic disturbances, something which would otherwise have been an extremely difficult task and this procedure reduced the psychotherapeutic procedure, immeasurably.

AUTO-FELLATIO

A Case Report

Jerome Kay, M. D.,*
Delaware City, Del.

Auto-fellatio may be defined as the practice of putting the male genital organ into one's own mouth. Because of the intrinsic physical difficulty as well as the psychic barriers, this is a rare practice and case reports in the medical literature are few. Bragman described a man who, while sitting on the edge of a chair, lowered his head between his thighs, and upon experiencing an erection in this attitude, placed his penis in his mouth until an ejaculation occurred.[1] Kahn and Lion described a cool, egocentric, introverted, and self-sufficient man who practiced self-irrumination (self-fellatio) both to relieve sexual tension already aroused, on one hand, and to stimulate sexual excitement in himself, on the other.[2] Besides the overt reason, the act for this man serves to enhance his feeling of self-sufficiency, to give him a feeling of uniqueness and delight when exhibiting himself, and to rebel against his family and their moral standards.

---

*Clinical Director and Acting Medical Director, Governor Bacon Health Center.

Whereas this latter person was overtly homosexual, a more recent case had strong latent homosexual tendencies.[3] He was narcissistic, sexually self-sufficient through masturbation and auto-fellatio, and suffered paranoid and panic symptoms for which he was discharged from the military service.

We wish to report another case of auto-fellatio. The patient has been in psychotherapy for about 18 months and we do not want to report the details of the therapeutic process. Rather, we prefer to present a synopsis of this man's symptoms and background with comment about the significance of this unusual sexual perversion.

C. B. is a single, 22 year old man of Dutch background. He was referred for psychotherapy by a Veteran's Administration counsellor when he consulted the counsellor about his progress in a business college. His perplexity, anxiety, and inappropriate laughter led the counsellor to refer him to this physician.

The patient was a tall, asthenic man of 21 when first seen. Except for acne vulgaris, myopia and varicose veins of both lower extremities, physical and neurological examinations were essentially negative. His past medical history was non-contributory.

C. B.'s parents were both schoolteachers who had settled in a rural background and had become farmers. The patient describes his father as inconsiderate, unloving, and cruel. Little is known of his father's family. C. B.'s mother was described by him as "just crazy — she talks all the time, and she is stupid — no one listens to her or pays any attention to what she says." Of significance in the patient's maternal line, are the three maternal siblings, two of whom have been hospitalized in mental hospitals and the third an eccentric person. The patient was the youngest of 7 siblings. An older brother died at the age of 5 in the year of the patient's conception. This brother had the same given name as that of the patient, and the patient felt many times that he was wanted in order to replace his brother and for no other reason. He said "I have felt many times that I wouldn't be alive if the first Charlie didn't die." Promiscuity, erratic temper, irresponsibility, incestuous relationships between siblings — were all described as part of the family pattern by the patient. It is interesting that despite the 18 months of psychotherapeutic relationship, the patient did not mention this to his parents and expressed the desire for this physician not to contact any members of his family. We have, thus, only the patient's own impression and feelings about his family and he depicted an atmosphere of envy, cruelty, dysharmony, incest, and above all, complete rejection of himself by them.

When first seen, C. B. appeared anxious and extremely ill at ease. His attire was casual but extremely neat. There was marked variation in the volume of his voice and in the flow of words. He squirmed in his seat, avoided this physician's eyes, and revealed scatter of ideation. There were marked shifts in emotional tone and in the moods, themselves. He went rapidly from laughter to tears and a great deal of his ideation was accompanied by inappropriate laughter. About this latter, he commented "It's my way of expressing feeling — it's more social than crying." He expressed paranoid trends manifested by ideas of reference and feelings that people were prejudiced against him. Suicidal ideation was present with great loss of self-love. He commented "In fact, I don't like myself." He was guarded when attempts were made to elicit auditory hallucinations but it was apparent that they must have existed because he vaguely alluded to "voices which call me things." However, attempts to specifically elicit them were handled in a most guarded manner. He believed in mental telepathy, feeling that his own thinking could telepathically influence other people's minds and vice versa. He complained of decreased efficiency in school with the inability to concentrate and attain that degree of efficiency which was compatible with his intellectual capacity. It was apparent that C. B. ws suffering from a schizophrenic reaction.

There is much in this man's early life to indicate that he was disturbed when young. As a young child, he was a nail biter, enuretic, slept with the light on because of a fear of the dark, and he commented that he used to chew his coat collar until he was 10 years of age. He used to pick his nose excessively and in fact, still does. His early school reports indicated excessive absenteeism, many latenesses, great variability in marks, and disobedience and restlessness. He remembers resisting the process of growing up and commented that when he was 5 he wanted to be even younger in order to avoid "the imposition of growing up." He remembers deep feelings of inferiority when he compared himself to his father when he was 10 and marked fears of death both of himself and of his father when he was 12. Throughout his life he was markedly conscious of certain physical inadequacies. He felt that his penis was too small. He was extremely ashamed of his acne and felt that his breasts were overdeveloped for a man and made efforts to bind them with elastic or squeeze them in an attempt to make them smaller.

For the first 7 years in school he did rather well although his marks were somewhat erratic. His marks definitely took a downward trend when he was in the 8th grade at the age of 14 and during this time rebelled against his schoolteachers. He graduated high school at the age of 17 with a C minus average ranking 69th in a class of 89. He left home after many quarrels with his family and became an occupational nomad. He then served 3 months in the armed forces, was AWOL 3 times and was ultimately discharged for failure to adjust ("Section 9"). He then spent a year wandering about the country making his living as a professional gambler using a "fixed deck," the details of which he had learned from books. He then took several more positions all of which he left after an enthusiastic start, and then entered a business college which he attended for 6 months before he was seen by this physician. He had a consistent pattern of beginning many new projects with boundless enthusiasm only to abandon them in a brief period of time because of disappointment that he had not mastered this new field.

It was the same way in his interpersonal relationships. His ties to his family were markedly ambivalent and loose. He had left home several years before he consulted this physician and had little contact with his relatives since then. He was self-conscious and guilty in the presence of women, young and old. With older men he was hostile and used them to borrow money without ever repaying them. With men of his own age, he became friendly quickly only to become hostile and discard them in a matter of a few weeks' acquaintance. When he lived at home with his family, he felt "like an outsider," and returned home when they were asleep so as to avoid them. When they gathered socially, he would go off by himself. He commented that he never had close friends and always felt alone. Once with his eyes tearful and with a most depressed mien, he said "I never go with any one — never, never, never. Oh, maybe I see them 3 or 4 times and then I can't stand to be with them any more. I can't stand to be with someone too long. I get the desire to run and get somewhere in a hurry." He mentioned how it was impossible for him to have feelings for other people and said "Really, the only person I feel for is for Charlie," (himself).

In the course of time certain symptoms, other than those already described as present at the time of the first visit and in the patient's background, came to life. His personal habits were extremely irregular, and his judgment poor. Once he commented "I let my feelings out all the time — anytime I feel like doing things, I do it." He was burdened with subjective feelings of guilt constantly and said on one occasion "When I walk down the street, anyone can have a dirtier shirt on than me, but if I have on just one speck, I feel bad." He was uncomfortable when in the presence of people talking or joking about sexual matters and could not tolerate the vernacular terminology for excretion and sexual activity. At the same time he could not say the word "love" and had a compulsive urge after studying the dictionary, to get up out of bed at night and check on the definition of certain words which flashed through his mind. He also suffered from a compulsive need to observe the genital areas of men. He had a fear that he was an aggressive homosexual and at times reached a point of panic when overly concerned about this. He lost a position in a factory claiming that he was fired because everyone knew he was a homosexual on the basis of his mannerisms of smoking and his high pitched voice. On one occasion, while driving down the street in the company car, he thought that individuals in an automobile which he was passing said "I hear you suck it" and he went over and complained to the police about this. This was probably a hallucinatory phenomenon occurring at the time he was suffering from a mild form of a homosexual panic.

The patient states that he began the practice of auto-fellatio (which he referred to as "auto-homosexuality") at the age of 14. He stated he committed the act about 6 times and began it because "I wanted to do something bad." It is interesting that after he first mentioned this act to this physician, he left the office and told us later he expectorated every 10 feet while walking home "in a daze." He began his description of auto-fellatio commenting that when he attained orgasm while masturbating, he facilitated the practice by putting tension on his leg muscles with his legs in extension. He then said that he flexed his thighs against his abdomen while masturbating and put tension on his leg muscles in that position. He then went on to mention "a lad" in his classroom at school who could put one foot behind his head. The patient then practiced placing one foot behind his head and then found it possible to do this with both feet. He then commented that he often wondered about acrobats in circus who can "go into all kinds of positions." He was aware of a "hole" (meaning a hollow) in his stomach which he noted when he had placed both feet behind his neck. This was obviously the diastasis recti. (The patient had much concern about castration fears and about the presence of a vagina in the male. He had many dreams in which both the male and female sexual organs appeared in the same person.) He was unable to perform auto-fellatio the first time he attempted it when in this position. However, later on he was able to perform this act on 6 occasions. He stated he did this in order to initiate sexual excitement and was able to complete the act in this manner. He states he expectorated the semen which resulted from the ejaculation. In the process of discussing this with this physician the patient was markedly tense, upset and said he had feelings of revulsion. Shortly after the consultation in which this material was revealed the patient attempted once more to perform the act but states that he could not do it for either physical or psychological reasons. During subsequent interviews he commented that he fantasied either having relations with a woman "in the ordinary way" or performing cunnilingus.

There are many interesting facets in the psychosexual development of C. B. We will mention just a few. He had slept in bed with his mother for several years of his earlier life. He remembers, at the age of 3, following an injury to his groin that he was too self-conscious to disrobe in the presence of his mother and sister. When he was 7, he states that he was seduced by his 11 year old sister. He feels that he was unsuccessful in this act and that he has constantly felt unsuccessful in life thereafter. He was markedly guilty about this experience and interestingly enough, utilized his urethra as his sister utilized her vagina later by introducing water into it as his sister had done before the sexual act which they performed. He frequently introduced foreign objects into his own urethra. He indulged excessively in masturbation throughout his early years and up to and including the present, and frequently introduced his finger into his rectum while masturbating. On one occasion he introduced a piece of wood into his rectum which resembled a penis in its configuration. On another occasion he introduced a rubber tube into his rectum with the opposite end in his mouth and insufflated the rectum with considerable pain accompanied by some erotic pleasure. While nude he used

LIBRARY OF THE
COLLEGE OF PHYSICIANS

to stand and observe himself with his penis and testicles tucked backward between his legs so that he would resemble a woman. While in his teens he found himself sexually attracted to young girls and masturbated several of his nieces who were in the age range from 4 to 6. He had several sexual contacts with animals.

He was chiefly concerned about his homosexual experiences. It has already been mentioned that his chief fear and the one which he expressed with the most feeling was that he might be "a homosexual." By this, C. B. meant that he would be actively seeking homosexual contacts. In this manner he did not have the same feeling about some of his other homosexual experiences. These included such things as mutual masturbation and sodomy. He mentioned one homosexual experience in which he was passive and had his rectum insufflated by a man who applied his mouth to the patient's anus and blew air upward. This caused the patient considerable cramp-like pain. In his visit to brothels the patient had relations in the usual manner but in addition performed cunnilingus, and had fellatio performed upon him by a woman. It is interesting that in several of the homosexual acts performed upon the patient he pretended to have been asleep. This is his way of not assuming the responsibility for the act in which he participated. In the course of therapy, when the patient developed homosexual feelings toward this physician, he indulged in free association in which he erotized various parts of his body and created many types of perverse activity which he expressed freely. It was about this time that he developed some homosexual panic symptoms.

Discussion

We have presented a case of auto-fellatio occurring in an overt homosexual with a schizophrenic reaction. One of this man's chief psychiatric problems was his homosexuality which had overt expression on several occasions. In attempting to defend himself against actively seeking homosexual relationships, this man sought to become sexually self-sufficient and so performed upon himself that which he would have liked to perform upon another object choice. The act of auto-fellatio defended him from performing fellatio upon another individual. To the unique organization of C. B.'s personality, actively seeking homosexual contacts is far more distasteful than any other perverse activity.

A large determinant in C. B.'s auto-fellatio is his narcissism. By narcissism we mean the choice of one's own body as the object for gratification of libidinal drives when the ability to differentiate between oneself and objects outside of oneself exists. C. B. is undoubtedly narcissistic, and there is a consistency in his pattern of interpersonal relationships which bears this out. We feel that this strong narcissistic component led him to this rather difficult sexual practice.

C. B. has been in psychotherapy for 18 months with marked improvement. He has been employed regularly at the same position for the last 8 months and suffers less discomfort from anxiety.

REFERENCES

1. Bragman: Med. J. & Record 126: 488, 1927.
2. E. Kahn and E. G. Lion: Am. J. Psych. 95: 132, 1935.
3. M. M. Kessler and G. E. Poucher: Am. J. Psych. 103: 94, 1946.

MAINTAINING BALANCE

A. W. Gottschall, M. D.,*
Farnhurst, Del.

Speaking in a popular sense the function of the nervous system is to harmonize the activities of the human being. If there is a lack of balance in conduct, the indication is that of a sick nervous system, and consequently a sick individual. This is the great lesson to be learned from a serious study of human conduct. It is a definite tendency of future scientific efforts toward human progress. Something out of balance means something inefficient as surely as the same principle holds good in the inefficiency of a mechanical contrivance. Were an absolute organic balance possible in the human, he would be immune to every disease. Unfortunately environmental circumstances disturb this balance and make him constantly susceptible. Man's entire existence, after he reaches maturity, depends on the harmonious functioning of his mind which enables him to get along with other people, to do his work well and to contribute his share to the welfare of society. This he is able to do when he is able to think and to translate his thinking into definite action.

---

*Senior Assistant Physician, Delaware State Hospital.

When he is not able to do this, he is not well balanced and is subject to a host of difficulties that science is trying to combat. Good health is dependent upon organic balance. The equal distribution of energy into service of the necessary functions where disease and structural defects exist, the balance is disturbed. In the case of a structural defect with more energy than normal being utilized, it is evident that the defective organ becomes not only more active, but more expressive than the normal organ. Every subnormal organ is more plastic and adaptable than normal organs or functions. Under the stimulus and protection of the central nervous system when it has taken the helm, they may become supernormal. What is more important, they may be compensated by other organs or functions with which they are correlated. Moreover, super structures are built which substitute for them, supplementing their deficiencies, thus recalling that man is a congeries of many organs in various stages of evolution and decline. The nervous system, when it comes to power, establishes a set of inter-relations between those which are essential under the impulse of the will to live leaving some to decline and powerfully stimulating others to unfold and develop. By keeping them sufficiently but not too much in exercise, it reinforces both atrophy and hypertrophy. In the effort of the psyche to foster the important organs and functions which it selects for its special care, organic defects may be compensated by excess of nervous activity. Indeed, most compensations are in the psyche, though not necessarily in the conscious field. No one is perfect and hence compensation is necessary for all. It makes for, if indeed, it does not make consciousness itself. Those organs and functions which the psyche can not directly or indirectly control, decay or become stigmata. Where the brain fails to establish a compensatory system, we have all the host of neuroses and psychoses and their myriads of symptoms which comprise psychiatric illness.

* * * * *

The nature of psychiatric illness and the production of symptoms may perhaps be oversimplified on the S-R Principle, where S stands for stimulus and R stands for response. The simplest form of S-R is the Reflex:

When stimuli are carried by sensory nerves to the spinal cord and are relayed to motor nerves, which carry them to their destination where muscular or glandular action is produced, and this response is produced before the stimulus is perceived. This, of course, has not taken the "thinking" brain into consideration.

Therefore, the stimuli reaching the sensory portion of the spinal cord through the sensory nerves are carried by way of the spinal cord to the brain as sensory stimuli, and the participation of "brain" in the S-R complex presupposes 4 fundamental concepts.

They are:

a. *Perception*: The Brain is being bombarded constantly by millions of stimuli coming in over the receptors from inside the body and from the outside world. Most of these it disregards, but *those stimuli that are important enough to be recognized are called perceptions. The process of receiving Stimuli and identifying or recognizing them constitute perception.*

b. *Intellection*: (or Cognition): Perception cannot be formed in Vacuo. The perceived Stimulus must be compared with previously stored information (memories), departmentalized, recorded, etc. *This comparing, regrouping, and registering process is called "thinking"* or cognition, or intellection. The process differs from perception only in degree and not in kind.

c. *Volition*: (or Conation): After a stimulus is perceived and sorted, it must be translated into action. *The resolving of sensations into some sort of outgoing messages which produces motions, which in turn produces acts, which finally crystalize into behavior. This resolving and bringing into a focus is called Will or Volition or Conation.*

d. *Emotion*: There is another part to the cerebration. This part is linked to our memories and hence to our perceivings and resolvings, and it is called Emotion. You can define Emotion anyway you want (many people do) but one thing we do know, i. e., Emotions are infinitely related to our Endocrine function. Thus we have, within the brain, areas for *Perception, Intellection, Volition* and *Emotion.*

A stimulus, being carried over the sensory nervous system to the spinal cord, reaches the brain by way of the cord through the sensory tracks to the centers of perception and from there relayed to the centers of intellection, and some relays to the centers of emotion, and from the centers of intellection to those of volition, and some from the emotion center to the areas of volition, and from the emotional centers, impulses are sent to and are received from the endocrine system. From the volition center through motor fibres, the response is sent down to the cord and out to that particular part of the body which is to respond to the stimuli. This response is one which has been the result of perception and intellection, emotion and volition, and is a highly complicated type of response to the stimulus received.

In the production of illness and symptoms, perhaps another principle may be introduced, the P-S Principle, where P stands for *personality* and S stands for *situation*. When a personality meets with a situation, two things can happen; it is either a *success* or a *failure*. If it is a failure, it can result either in a *broken personality*, or a *broken situation*, or a *constructive compromise*.

a. When a personality meets a situation, there follows a period of attempted adjustment which can result in success or failure, i. e., maladjustment, and from the failure or maladjustment, there develops on one hand a broken personality, or on the other a broken situation or a constructive compromise which is the second defense. From the broken personality, there may develop psychiatric illness, suicide, etc. From a broken situation, there may result crime, anti-social acts, murders, etc. From the constructive compromise which is the second defense, there may develop an adherence to such arts as music, literature, philanthropies, etc.

Wernicke said that all misfunction could be classified as *quantitative* or *qualitative*, i. e., *too little* (Deficient) *too much* (Excessive), *or the wrong kind* (Distorted). Applying this over-simplified principle to our concept of the areas of Perception, Intellection, Emotion, and Volition, we find the following:

Perception: The *deficient* results in deafness, blindness, etc.
The *excessive* results in over-sensitiveness and hyperacuteness.
The *distorted* results in hallucinations.
Intellection: The *deficient* produces stupidity, mental defective, etc.
The *excessive*, the genius, superior, etc.
The *distorted*, delusions.
Emotions: The *deficient* produces apathy, blunted or flat affect, etc.
The *excessive*, elation, euphoria, mania, etc.
The *distorted*, phobias.
Volition: The *deficient* produces inertia, retardation, etc.
The *excessive*, mania, increased activity, etc.
The *distorted*, compulsions.

Whether we approach human problems from a physical angle or from a psychological view point, we always arrive at a point where the two seem to meet. We know that the babe at birth is carrying the effects of race experience in its organism. We know that immediately after birth, the babe commences to absorb effects in its environment. How the organism meets this environmental influence and what its limitations are in the environment is the great question. That question will be answered only when throughout life, the individual's intellectual endowments meet with and harmonize or maintain balance with his environmental demands.

MENTAL HYGIENE AND A CONTINUOUS STATE OF COLD WAR

LOUIS J. KOWALSKI, M. D.,*
Farnhurst, Del.

The value of prevention of mental illness, just like the prevention of other illnesses, is worth many times the cure. Definite progress has been made in the treatment of acute disturbances and the duration of acute mental illnesses shortened. Early psychiatric treatment often checked the actual occurrence of frank psychoses. Some degree of consolation and gratification is certainly available in securing good results from treatment of these conditions. However, the greatest pleasure and satisfaction, that persons in the mental hygiene field obtain, is derived from the knowledge that masses of people are educated and understand how to utilize the mobilized forces and factors that help conserve mental health.

---

*Senior Assistant Physician, Delaware State Hospital.

A basic understanding of mental health and and the implementation of principles to protect mental health should be the concern of all people. To most individuals, in spite of cultural, religious, social, economic and philosophic differences, this means prosperous living—which implies a satisfying, self-respecting progression in the human being from the earliest beginning to final glory. It further implies control of one's creative potentialities in economic, financial, social, racial and familial spheres as it relates to other individuals or groups of people or society in general. All factors concerned in this progression of the individual should be clearly and simply defined for easy use of the average individual.

Four-fifths (4/5) of the world's population had some direct or indirect contacts or exposure to actual war or its results. They have experienced or are experiencing the anxieties, fears and terrible uncertainties associated with war. They have some knowledge concerning the various facets of carrying on war, the needs and goals, and also develop a philosophic attitude toward the hated enemy and the beloved allies. All are willing to make some sacrifices to attain their objective.

Since most people have some familiarity with some aspect of war and are conversant about war generally — an approach to Mental Health and Mental Hygiene in terms of logistics and war may have the most favorable consequences especially as an educational guide that would alert and attract peoples to the general problems of conservation of mental health and the prevention of mental illness.

It may seem at first paradoxical to speak of mental health in terms of a continuous state of cold war but even a very superficial glance and study of terminology applied to life in general leads one directly to phrases and words which signify a battle or war: that is, forces in conflict, struggle, rivalry, competition, resistance, destruction, retreat, offense, wounds, trauma, scars, tension, power, defeat, victory, surrender, hostility, truce, peace, safety, security, striving, mobilization, disarmament, etc.

A well planned concerted action by a national (preferably) or state organization to reach the maximum number of people with an agreed upon terminology, definition and formulation by all interested individuals, groups, societies, associations and conventions in mental hygiene could be inaugurated. The object would be to use words and terms that everyone will understand and would apply correctly for individual and mutual benefit.

Since the human being is an indivisible biologic unit, a new word should be coined and adopted for general use — it should mean just that and not a part or division in organic and psychic. The new word should convey and be symbolic of the indivisible biologic unit. Once the word is adopted, such factors as heredity, environment, constitution, culture, society and physiological and psychogenic functions including the intangibles could be manipulated on the principles of logistics. There is no one word that means and describes an individual with healthy body and mind except by implication, that is military personnel such as soldier, sailor, marine, etc., who are accepted for military services after a careful and complete examination. However, the Latin phrase — MENS SANA IN CORPORE SANO — has been widely used for descriptive purposes and motto. Taking the first letter of each word in that phrase — a new word MSICS (which could be shortened to MSIX) is available which would describe the indivisible biologic unit adequately.

Since this reads definitely like an utopian plan — the application of logistics which in itself is universal should lead to the least resistance in utilizing the material for rapid advance in fields of mental health. Simply stated it should work like this. A prosperously living individual would rate an ascribed or established standard value. Heredity, constitution, environment, socio-economic-cultural factors and intellectual endowment would be given definite numerical positive values. All new experiences, encounters and maneuvers that an individual battles through are given a minus value. Depending on the resourcefulness in the use of the positive values to conquer and assimilate the negative values, a balance is attained. The final result being still a prosperously living individual providing he is victorious in most of his life encounters.

This is a rough idea, which can easily be elaborated into volumes but should not. If it is to reach the masses of people it should be presented in a short, clear and concrete form. An abstract idea such as mental health or mental hygiene can be conveyed to and understood by the average individual if it is converted into a concrete symbol.

CONTRAINDICATIONS FOR ELECTRIC SHOCK TREATMENT

The Need For Re-evaluation

H. George De Cherney, M. D.,*
Farnhurst, Del.

Certain physical conditions have long been looked upon as contraindicative of electric shock treatment (EST) and, as a result, there are still some clinicians who are reluctant to submit these so-called "poor physical risks" to EST even though it is therapeutically indicated. However, more recently, studies of case histories have been reported where no additional pathological changes have occurred in such patients as a result of EST. The two cases which will be reported here give added support to the growing belief in a more widened use of this type of treatment.

Case #1. This is the case of a 62-year-old widow who was previously admitted to the Delaware State Hospital in 1946 where she remained for five months. At that time a diagnosis of manic-depressive, mixed type was made. She received EST, made an uneventful recovery and was discharged from the hospital. She was getting along quite well until five weeks prior to her second admission in February, 1951. At this time she was referred to the hospital by her family physician because of her numerous physical complaints, her state of depression and the possibility of suicide. During these five weeks she became withdrawn. On admission she presented the picture of an individual who was extremely anxious and tense and slowed up in her thought processes. There was no spontaneity during the interviews; however, upon careful questioning she talked about some trifling misdemeanors in her past about which she felt very guilty. She gave the usual physiological components of depression, namely, inability to sleep, loss of appetite and constipation. She stated that her spirits were very low and, although she denied suicidal ideas, upon questioning it was apparent that she was preoccupied with this thought. The diagnosis of manic-depressive, depressed type was made and preparations for EST were initiated which, for all patients over 40, include an EKG, a lateral x-ray of the thoracic spine and the other routine laboratory examinations, urinalysis, etc. The EKG was read by our consulting cardiologist who reported a "left bundle branch block signifying coronary sclerosis with myocardial damage or previous coronary thrombosis." The seriousness of the mental status was weighed against the cardiac disturbance and, in view of the danger of the psychotic condition and its effect upon the heart, EST was decided upon. This patient responded well to a course of 7 electric shock treatments. At the end of the treatments she began to eat well, sleep well and externalize her interests to an adequate degree. She began to socialize in the clinic and was again on her way to an uneventful recovery. Following her last shock treatment another EKG was made showing essentially no change in comparison to the tracing taken before treatment. She remained in the hospital for two months. Since discharge she has been seen in follow-up interviews and is making a good adjustment at home.

Case #2. This is the case of a 64-year-old widower who had been admitted to the Delaware State Hospital on two previous occasions in 1936 and 1945 for a period of three months on each hospitalization. On each admission a diagnosis of manic-depressive, depressed type was made. The patient received EST, responded well and was making an adequate adjustment until January, 1951, when his family physician sent him to a general hospital for a left hemiplegia due to a cerebral thrombosis. An EKG taken at that time showed a "tendency to right bundle branch block" and the tracing suggested "definite myocardial damage." Following this episode he became extremely depressed, stayed in bed continually, could not eat or sleep and cried on numerous occasions. Because of the good response to EST on previous admission, his family decided to have him readmitted in March, 1951. On admission he sat with his head down, his brow furrowed and he showed a tremendous amount of psychomotor retardation. He felt that he was not wanted by his family and that he was alone. He said that he had committed a sin in going out with other women, even though his wife had been dead for some time. He had lost 30 pounds in a short time because of the anorexia and he said he felt "blue" all the time. He was oriented in all spheres and his memory for past and present events was good. There was no evidence of any organic mental disturbance. Because of the depth of the depression, it was felt that EST should be initiated immediately even in view of the residuals of the cerebral vascular accident and EKG findings. He was given a course of 5 shock treatments and responded well. The good appetite he had had prior to his illness returned and there was no evidence of any depression either physiologically or psychologically. He was discharged after two months and has been seen in subsequent interviews. He was able to return to work and make an adequate social adjustment.

---

*Senior Assistant Physician, Delaware State Hospital.

Summary

The purpose of this paper has been to present two cases in which EST was administered successfully even though there were severe organic disturbances present. The absence of further organic damage after EST was demonstrated by electrocardiographic and physical examination following the course of treatment. Evidence from the two cases cited and those reported elsewhere indicate the need for re-evaluating the contra-indications of EST.

REFERENCE

Kalinowsky, L. B., and Hoch, P. H.: Shock Treatments and Other Somatic Procedures in Psychiatry, New York: Greene & Stratton, 1946.

A CASE OF EPILEPSY

Roy E. Reed, M. D.,[*]
Delaware City, Del.

In a chronic disease condition like epilepsy the therapeutic program must be planned to extend over a prolonged period, often many years. During this time the responsibility for carrying out the treatment program cannot safely be left to the judgment of the patient or his family. A schedule of follow-up care is essential and must in large part be assumed by the physician who accepts the patient for care.

The therapeutic program for epilepsy involves the use of methods and techniques of both internal medicine and psychiatry. For the great majority of patients there is no need for a specialist from each field, and the results are most satisfactory if a single physician assumes responsibility for both types of work. He must be willing and able, however, to arrange his schedule to allow from forty-five to sixty minutes a visit for each patient; shorter interviews are rarely adequate during the early phases of treatment. This amount of time is necessary because the physician must care not only for specific medication but also for the physical and emotional needs of the patient as well. In work of this type the cooperation of a medical or psychiatric social worker is of great assistance. It is obvious that if such time-consuming attention is to be given to any large number of patients some modification of the present-day practice of medicine will be required. No physician working on a fee-for-service basis can afford to give this type of care to any but the wealthy in a community. However, the problem of time appears more feasible when considered in the light of the several years over which it may extend. To a majority of patients who have been carefully studied at the beginning, satisfactory follow-up care during the first year can often be given through weekly interviews. In the second year of treatment, appointments at monthly intervals may suffice. Actually, the problem of time is not difficult to arrange. Less easy to solve is the problem of finding physicians whose interest and training permit them to do this type of work. With patients who already suffer from marked personality maladjustments when first seen, the responsibility for medical care may belong to the psychiatrist. And no matter how skillful the physician or psychiatrist may be in handling the problems of the epilepsy itself, the end result often depends on circumstances in the patient's environment that are beyond his control.

---

[*] First Assistant Physician, Governor Bacon Health Center.

The attitude of other members of the patient's household, the difficulties at work and at school, the financial problems of meeting the cost of medical care, in addition to family needs, all these have a direct bearing on the success of treatment and the outlook of the disease.

Although a program of preventive work with epileptic patients will in the course of time reduce the number requiring permanent custodial care, there will always be a need for institutions where a type of care can be provided other than that available in the physician's office, out-patient clinic, or the home. By the very nature of the causes of the disease, some individuals will have suffered from such extensive brain damage as to preclude normal living in a community. The type of institution most commonly needed falls into the class of so-called "convalescent" homes.

Such a "home" is the Seizure Control Unit at the Governor Bacon Health Center. Here the epileptic patient lives as a member of a group, away from his former environment with its irritations, frustrations and disappointments, and under direct psychiatric direction and supervision. Here facilities are available not only for medical and psychiatric care, but also for education, normal play activities, and the development of special interests. Health supervision, special diets, modern medication and intensive psychotherapy are available as called for. The duration of convalescent care will vary with the severity of the problems needing correction; in some instances a period of from three to six months will suffice to establish treatment and modify the child's attitudes toward his disease and toward his former environment.

Such a child patient is M. P., a white female of seven years who entered the Center in March of 1950 from her parents' home near Dover, Delaware. She is the only child of her mother's second marriage, and has two-half-siblings, aged 26 and 28. Both parents and the two brothers have overindulged M. to the point where she is a serious behavior problem. Her first year at school passed uneventfully; during the second year her teacher reported a lack of concentration, disinterest, irritability and epileptic convulsions. All these became rapidly worse, so that M. was reported to be having as many as two convulsions a day, and in October was removed from school. Her mother reported very few "spells" at home and wondered whether the teacher was afraid of the spells and was exaggerating the report of the trouble or whether M. was really having most of her trouble at school. Her adaptation to her new "home" at the Center was at first very stormy; she was intensely homesick, spending much of her time in wailing and self-pity; visits from her oversolicitous parents made her worse and generally had a devastating effect on her. Her adaptation was passive, dependent and controlling. She was adept at getting the other girls to do her assigned chores; she connived to be accepted as the darling of the ward, and had many admirers. After a period of observation she was found to have nothing that could be considered true epileptic phenomena, but did make a show of having spells of a hysteroid or semi-malignering nature, rather opportunistically exhibited. She was removed from the seizure unit to the cottage system to live, but here a rather rigid, demanding housemother failed to make allowances for M's excessive dependent needs, she in turn refusing to accept the responsibilities of group living; she had "spells" and eventually had to be returned to the seizure unit. Another attempt to promote M., this time to a warmer and more accepting type of housemother, proved successful; M. was taken in by the other girls, she was accepted as a person in her own right, with the privileges and responsibilities of a growing person; she found herself happy, contented and dignified. There have been no "spells" or other epileptic phenomena and her anti-convulsant medication has gradually been reduced to a trifling minimum.

THE NEED FOR MENTAL HYGIENE

A Case Report

Calvin Settlage, M. D.,*
Delaware City, Del.

Mental hygiene can be defined as the science dealing with the preservation of mental health, or to put it in another way, with the prevention of mental illness. Preventive psychiatry quite naturally has as its major focus the childhood period, since it is generally accepted that the experiences and influences of this period are vital in the determination of the character structure, the personality traits and the degree of maturity seen in the individual as an adult. Our knowledge and understanding of the principles governing healthy mental and emotional development broadly speaking has been derived from three main approaches: (1) through the diagnosis and treatment of emotional disturbance in the adult, wherein the childhood period is viewed in retrospect, (2) through the diagnosis and treatment of emotional disturbance in the child, wherein the cause and effect relationships are seen in a much closer chronology and at times almost in situ, (3) through the observation of the normal child in the normal environment, wherein the interaction of the child and the environment is seen to result in preservation of mental or emotional health. It is the purpose of this paper to illustrate the need for mental hygiene through a case report demonstrating the diagnostic evaluation of an emotionally disturbed child. A further goal is to acquaint the non-psychiatrically trained observer with the manner in which data derived from interviews with parents and child is interpreted in understanding the meaning of symptoms and in making a formulation of the psychopathology. In view of the purpose, as defined above, there will be no attempt to present all of the data available regarding this case since it would only serve to obscure the thinking employed in arriving at the major diagnostic impressions.

---

*Child Psychiatrist, Governor Bacon Health Center.

Eugene is a 6-year-old white boy referred to the Center with the symptoms of running away from home to a nearby woods, setting fires in the same woods, general disobedience and mischievousness, wetting himself, urinating on the floor at home, nervousness at night with crying and vague fearfulness, and nightmares with screaming as if afraid.

Upon examination the patient is seen to be a physically healthy, attractive boy, adept in motor activity and well socialized. He attends kindergarten and has not been a serious problem there. Psychological testing shows high average intelligence with good thinking ability and good perception of the reality world. He is somewhat inept in language ability, has a short attention span and shows a tendency to give up easily. In the psychiatric interview he related readily but somewhat apprehensively. He was alert and questioning. He produced a poorly structured watercolor painting and was quite anxious because it was rather messy. The subject of the painting was a house. When asked to tell a story about the people who lived in the house he replied, again with considerable anxiety, ''I can't tell a story about the family,'' the implication being that he would be talking about his own home. A short while later the examiner paraphrased the patient's difficulty by talking about how ''we want to help boys and girls who get all mixed up inside and do things which get them in trouble.'' The patient immediately responded ''that's what I do.'' In a subsequent contact on the playground he stated resentfully that if his mother and father didn't come that evening to take him on a weekend pass, he'd run to the woods and drown himself in the creek when he did get home.

Eugene was adopted at age 4 months, his parents having decided before their marriage that they would adopt a child if they had none of their own after five years of marriage. Father is a semi-skilled laborer and mother a housewife. Both parents are between 35 and 40 years of age. Mother is a highly religious person judged to be of average intelligence who is sincere and well motivated to be a good parent. However, at this point she is anxiously tense and has given up trying to control the patient, verbalizing her belief that his difficulty must be due to his heredity. She reveals in many statements that she has no great confidence in herself as a parent, and has always leaned heavily on advice from others, sometimes authoritative and often not. Father is also of good intelligence and with good intent as a parent. He is not as despairing as the mother, but does reveal some resentment towards the boy. He complains that although mother tells him he should play with his son, yet when he does so, the boy usually drifts away from father into playing with other children. At present the parents have a completely dependent attitude in seeking help from the Center, but nevertheless are eagerly cooperative. They both state that they are socially and sexually compatible.

Three years after the marriage mother lost a child through a miscarriage, and gained the impression that she could not get pregnant again. The patient was adopted a year and a half later. Subsequently mother did become pregnant, however, and there now is a brother age 20 months. Interestingly the patient apparently sensed the parents' desire for another child and was praying for a baby brother before mother knew she was pregnant. He has been openly resentful of this younger brother and the parents have tried to cope with the sibling rivalry by following a rule of "no partiality" giving the boys similar toys, candy and other material rewards.

The patient was examined psychologically at age 16 months and according to the mother was reported as normal but overactive. Mother states that she was advised to be strict with the patient and not let him get away with anything. She volunteers that in retrospect she may have been too strict with him. Both parents report that he was difficult to manage from the age of 2 years on, "always getting into things." He was not a serious problem, however, until about two years ago (which correlates in time with the beginning of mother's pregnancy). At that time mother, who had kept the patient under her constant, close surveillance before then, was unable to continue doing so because of the pregnancy. He then became unmanageable and began running to the woods. Since that time, increasing strictness and discipline has resulted in increasing misbehavior with the symptoms mentioned in the opening paragraph of the case report.

When interviewed, the parents also report a sexual problem in that the patient is known to have engaged in sex play consisting of mutual masturbation with older boys. This occurred about 20 months prior to admission. Since then he is known to masturbate frequently and regularly. It was decided that father should deal with this problem and he did so by telling Eugene that "God gave you that thing to 'pee' out of and if you use it for anything else, he may take it away from you."

The parents had been informed by the adoption agency that the patient should be told at some time that he was adopted. Mother began telling him he was adopted vaguely and indirectly through prayers. She could not recall the specific words used. Later, when the patient was 4 years of age and just before baby brother was born, she took the opportunity while reading to him from a book which had babies in it to tell him he was adopted. She explained that "God took your mother and father to heaven and we wanted a little boy, so we came and got you from the people who were taking care of you." Eugene made no comment and asked no questions.

In the process of diagnostic evaluation we can turn our attention first of all to the symptoms themselves. The running from home, the fire-setting, the disobedience, the wetting of himself and the urinating on the floor, all seem to be hostile expressions of rebellion against parental authority. The night fears and nightmares suggest that he is afraid of retaliation for these hostile feelings and destructive impulses. The remark about drowning himself in the creek is not only attention getting but also represents the turning of his hostile aggression towards himself. The continued masturbation seems to reflect both a rebelliousness in doing the forbidden and a compulsive need to prove himself unharmed sexually and able to win out over the implied threat of castration. If we now inquire as to the reasons for all of these symptoms of hostile aggression, we can discern a number of contributing causes: (1) The disciplinary strictness and excessively close supervision carried out apparently with authoritative permission. (2) The vagueness and indirectness accompanying the patient's learning of being adopted, which more than likely made him feel that there was something wrong with being adopted, since the parents couldn't face it more directly. (3) The subsequent arrival of a baby brother who is the real child of the parents and not adopted as is the patient. (4) The handling of the sibling rivalry with such complete impartiality that the patient felt there was no compensation for being displaced from the center of attention by the younger brother. (5) The handling of the masturbatory problem in such a way as to pose a threat to his masculinity and to his physical well being.

It does not take too much imagination to formulate what these various factors added up to in the child's mind. Being adopted would seem to be a distinct disadvantage in maintaining his status with the parents and in competing with baby brother for their love and affection. Also he probably interpreted the disciplinary strictness, the lack of individualization in dealing with the sibling rivalry and the threat implied in the taboo against masturbation as evidence of a lack of understanding on the part of the parents, and probably also as evidence of parental rejection. Add to this the perplexity and confusion engendered in trying to understand such an abstraction as being adopted, and such a fear laden and shrouded subject as sexuality, and we see a good deal to account for a mentally and emotionally disturbed child.

Returning to the opening remarks regarding mental hygiene, we see that in this case the diagnostic evaluation serves to point up the need for preventive aid. Particularly with parents such as these, who are not so much emotionally disturbed or inadequate as they are insecure, proper dissemination of knowledge and guidance may be of great value. Help with the difficult problem of employing discipline in such a way as to gain cooperative self-sufficiency instead of rebellious self-assertion; with the problem of explaining adoption in a non-traumatic manner; and with the problem of giving lucid but non-threatening and non-provocative interpretation regarding sexual experiences could have been of great hygienic value to these parents and this child. Although a good deal is known about both the state of mental health and the state of mental illness, the problem of application of this knowledge in a preventive manner is still for the most part unsolved, and accordingly merits the serious thought and attention not only of psychiatrists but of the entire medical profession.

REFERENCES

Federn, P. and Meng, H.: Psychoanalytic Prevention versus Therapeutic Psychoanalysis. Searchlights on Delinquency, Internat. Universities Press, 1949.

Greenberg, H. A.: Child Psychiatry and the Practice of Medicine, Ill. Med. J., 90: Nov. 1946.

Sloman, S. S.: Emotional Problems in "Planned-for" Children, Am. J. Orthopsychiat., 18: July, 1948.

Van Ophuijsen, J. H. W.: Primary Conduct Disturbances: Their Diagnosis and Treatment. Modern Trends in Child Psychiatry, Internat. Universities Press, 1945.

SODIUM AMYTAL ADDICTION WITH AN ACUTE TOXIC PSYCHOSIS

Julius Fechner, M. D.,*
Farnhurst, Del.

The patient, a white male, 34, father of a two-year-old son, came to the Delaware State Hospital as a voluntary admission on an emergency basis. His mother had informed the Director of the Mental Hygiene Clinic that patient was using daily up to 20 capsules of Sodium Amytal, each containing 3 grains of the drug. He managed somehow to get refills of an old prescription and spent between $1.25 and $1.50 per day over a period of several years, skillfully hiding his addiction from his common law wife and from his mother. The patient, whose work record has never been too good, had spent the last four months at home because he was always drowsy and tired. The patient has been referred to the Mental Hygiene Clinic by his family physician in 1941, the reason being the young man's extreme shyness in the presence of strangers, his fear of meeting people and of talking to them and the subsequent use of alcohol to steady his nerves.

The social history, as obtained at that time, disclosed that patient's father, a butcher, was a chronic alcoholic who abused his wife and two sons when he was intoxicated. The family life was unhappy because of this and there was also rivalry between the elder and younger brother, our patient, for their mother's affection and attention. The patient was a normal, full-term infant. When 12 months old, he was severely ill with bronchitis and, according to his mother, had been nervous ever since. He started schooling at the age of 6 and quit when 15 without graduating from the 8th grade because he was afraid of and hated arithmetic. When 20, he took a correspondence course in advertising but never could get a job in that field because he became tongue-tied whenever he appeared for an interview. The only job he could then get was to prepare walls for paperhanging. His employer was his uncle, against whom patient showed great hostility instead of gratitude. Patient was enuretic till the age of 8 and still chews his nails. After a preliminary interview with a psychologist, patient failed to keep his appointment with a psychiatrist. He reappeared at the Mental Hygiene Clinic in 1943, stating he had been classified 4F because of psychoneurosis, that all his buddies were "in" and he was unhappy to be left out. He, therefore, requested a certificate from the Mental Hygiene Clinic to the effect that he was eligible for Army service.

---

*Acting Senior Assistant Physician, Delaware State Hospital.

He next came to the Clinic in 1950 with a statement from his family physician that patient was a psychoneurotic who was unable to work or sleep and who was receiving medication for his nervous condition. Yet again after a preliminary interview, during which psychometric tests were done, the patient failed to keep an appointment with the psychiatrist. Nothing was heard of him until his mother requested by phone that patient be admitted on an emergency basis because of severe intoxication due to the prolonged use of increasingly large doses of sodium amytal.

It would seem that this young man, unable and unwilling to tackle his problems, first looked to alcohol for solace and succor. Then when introduced to sodium amytal, he came to depend on its "stronger and longer action" for relief from unbearable tension.

Upon admission, the patient's sensorium was clouded and speech was slow and thick. Questions had to be repeated again and again to get some response.

Patellar reflexes were barely obtainable. Plantar, cremasteric, abdominal reflexes were not obtained. Patient was unable to stand erect without toppling over. His gait was ataxic. The pupils were mydriatic and responded poorly to light and accommodation. The corneal reflex was abolished bilaterally.

Upon admission the patient's blood pressure was 138/100. Pulse 78; heart and lungs were negative. Urea nitrogen 19. Cephalin test negative.

After administration of 50 cc. of 50% glucose, plus caffeine, sodium benzoate, plus 10 units of insulin, plus 200 milligrams of thiamine hydrochloride, patient answered a few simple questions but soon again became drowsy. The above medication was kept up for the next four days at the rate of 3 injections per day. 10% glucose in saline was given in repeated doses of 500 cc. to prevent dehydration. As a withdrawal reaction, patient had 4 convulsive seizures of the grand mal type and it was necessary to administer 1½ grains of dilantin, 3 times a day, for 6 days to cope with this symptom. On July 10, 1951, 50 cc. of liquor cerebro-spinalis, were obtained; the manometric reading was 22 milligrams of mercury; the laboratory findings of the spinal fluid were within physiological limits. Gradually the sensorium cleared and the neurological responses are returning to a normal pattern. After visiting the patient on July 16, 1951 for the first time since his admission to the Delaware State Hospital, the common law wife remarked that her husband seemed "quite normal" to her, spoke clearly and relevantly about his situation and expressed his desire to return home. Moreover, he promised never again to take the capsules, the use of which he managed to hide from the common law wife and his mother.

Resume

A 34-year-old man has been under observation at the Mental Hygiene Clinic of the Delaware State Hospital. He showed many neurotic traits but never submitted to a psychiatric treatment. For the past few years he took increasingly large doses of Sodium Amytal which he obtained as refills of an original prescription. He was admitted to the Delaware State Hospital on an emergency basis with the symptoms of an acute toxic (exogenous) psychosis. An outline of diagnostic data and therapy is given.

SYPHILIS IN NEGRO PATIENTS

C. Lawrence R. Souder, M. D.,*
Farnhurst, Del.

In the group of luetic patients admitted to mental institutions the classification of syphilis includes: (1) meningeal; (2) Vascular or meningeal; (3) parenchymatous types. Two other forms include (1) asymptomatic neurosyphilis; and (2) gummatous neurosyphilis.

Neurosyphilis, as brought out in recent literature on the subject, has apparently been increasing in the negro population and bone and visceral syphilis seems to be decreasing. The effect of race also presents some different clinical manifestations. In comparison with the white population, for instance, there has been noted an earlier age of onset of the infection.

---

*Assistant Physician, Delaware State Hospital.

Invasion of the nervous system by the treponema pallidum occurs in the early weeks or months of the infection. Syphilis may be diagnosed even in the complete absence of clinical evidence of the disease by means of routine examination of the cerebro-spinal fluid.

In a group of 136 patients, all of whom were admitted to this hospital between January, 1945 and July, 1951, it was found that syphilis was either a major or contributing factor of their psychosis. In the majority of these cases the syphilitic involvement of the central nervous system was the direct cause of their psychosis.

71 patients of this group had general paresis with positive spinal fluid Wassermann, colloidal gold curve and other spinal fluid findings. 11 patients had cerebral syphilis and 1 patient had tabo-paresis and 54 of the admissions during that period had vascular lues.

Specific therapy consisted of penicillin, fever treatments, arsenicals (including mapharsen for vascular lues and aldarsone for general paresis) and bismuth. Every luetic case received a minimum of 10 million units of penicillin as soon as a diagnosis had been confirmed by laboratory results. 20 million units were given to the particularly acute or serious cases. Repetition of courses of penicillin was carried out each year in cases resistant to treatment.

Four of the cases of vascular lues responded by having negative serology after receiving penicillin treatment alone. 26 cases received 1 or more courses of fever therapy in combination with Aldarsone after having had their courses of penicillin and bismuth. In these cases they were given the injection of Aldarsone intravenously after an injection of 50 cc. of 50% glucose intravenously at the height of the fever, once weekly, during the hyperpyrexia treatment.

The improvement in the psychosis was often found to parallel the blood and spinal fluid findings. The shorter the duration of the paretic symptoms, the better were the results.

A few patients required electro-shock treatment in addition to the combination of penicillin, fever, arsenicals and bismuth. The results of treatment depended also, to a large extent, on the type of psychosis present prior to therapy.

Penicillin, in combination with the heavy metals and fever therapy, exerted a favorable effect on the spinal fluid abnormalities of an appreciable number of these cases. In several cases, the complement-fixation (Wassermann) reaction became negative, and what was more important, there was improvement in the cell count, protein content and colloidal gold curve in the spinal fluid of the patients who were benefited by the treatments.

Of the entire group of 136 patients, with a diagnosis of some form of syphilis, 84 of this number today are out of the hospital, either on Trial Visit or have been discharged. All of them were advised to receive follow-up treaments and check-up at the Delaware State Hospital out-patient clinic, one of the state clinics, or from their private physician. A very small number of patients were referred to other hospitals, 11 patients died while in the hospital, several of these from intercurrent infections.

It became possible to discharge some of the cases who were on Trial Visit and free from psychosis.

In summary, penicillin alone has been found sufficient treatment for a number of cases of syphilis. In a large number of cases of neurosyphilis, penicillin and a combination of fever therapy with the arsenicals (mapharsen and/or aldarsone) and the heavy metals have given good results.

REFERENCES

Moore, Joseph Earle: Penicillin in Syphilis, 1946.
Beerman, Herman, et al.: Syphilis; a Review of the Recent Literature, Arch. Int. Med., p. 424, March, 1951.
Epstein, Norman N. and Kay, J. M. (I.) and Allen, James R. (II): Treatment of Neurosyphilis Combined with Artificial Fever Therapy, Arch. Derm. Syph. 63: 419, April, 1951.
Beerman, Herman, et al.: Arch. Int. Med.: 496, March, 1950.
Physio-Therapy Department (including Hyperpyrexia Treatments)—Delaware State Hospital.

ALCOHOLISM

William A. Byrne, M. D.,*
Wilmington, Del.

One of the most pressing needs confronting the nation at this time is the problem of alcoholism. It has been estimated that there are over 3,500,000 alcoholics in the United States. Industry has lost a minimum of 228,000,000 work hours in the past year because of this problem. The first admission rate of alcoholic psychoses was 10.6 per 100,000 population in the mental institutions of one of our largest states. Numerous highway deaths are the result of driving while under the influence of alcohol.

---

*Part-time Psychiatrist, Delaware State Hospital.

The problem is a vast one and has many ramifications. Moral issues, social issues and economic issues have been raised to explain the alcoholic habit. We find some who say it is sinful to drink and the person presumably must be just plain bad. Some excuse the drinking because of poor housing, others on financial grounds. Not too many years ago the government attempted to solve the problem by legislation, namely, the 18th Amendment or what has been more commonly known as the "noble experiment." While there is no doubt that moral, social and economic issues result from the abuse of alcohol, it seems unreasonable to assert they are the cause.

In recent years we have gradually accepted the concept that Europeans have known for years, that alcoholism is essentially a medical problem. Since it is a medical problem, as physicians, we are faced with the choice of methods of treatment.

From numerous studies of these individuals, careful investigation of life histories and various reasons given by patients for drinking, it is apparent there is no single direct cause. One also concludes that alcohol satisfies some deeply-seated psychological need. This need for the most part, seems to be a relief of tension caused by an internal conflict. The alcoholic has a low tolerance for anxiety and frustration and must alleviate this anxiety. It has been known for centuries that alcohol makes one feel better and since it is so easy to obtain and it is socially acceptable to drink, at least moderately, it is no surprise that alcohol has become the chief vehicle to relieve the tension and anxiety. The alcoholic, contrary to public opinion, is not the hale and hardy individual he is often depicted. In reality, he is essentially the dependent individual, one who is afraid of life and life's problems and who needs help but at the same time resents it. In fact, the alcoholic is in most cases a compulsive individual — the alcoholic habit in itself, being a compulsion. Many alcoholics are depressed and have learned that the alcohol makes them feel better, usually resulting, however, in the classical morning hang-over. It would seem as if the alcoholic drinks to forget, usually not some external factor, although this factor in some cases is frustrating enough that it must be remedied before any cure is affected, but some tension or anxiety caused by unconscious wishes or desires. In turn, the alcohol releases inhibitions, dissolves the conscience so to speak, and allows unacceptable thoughts and impulses to enter consciousness. These the individual cannot tolerate, so he resorts to more alcohol and a vicious cycle is started.

Alcohol is not the only method of escape an individual may use, hence, the need for careful use of drugs in the course of therapy. To what avail is the cure of alcoholism if we leave the patient addicted to drugs? Also, it is well to keep in mind that the alcohol may mask a severely disintegrated personality and its abrupt withdrawal with no support may precipitate a latent schizophrenic reaction.

Since the physiological effects of alcohol are well known, no mention will be made of them here.

The treatment of the alcoholic might be divided into three phases: (1) the acute state of intoxication — the length of time and amount of alcohol involved will determine whether simple sedation or more radical forms of therapy are needed; (2) the physical or repair stage caused by lack of vitamins are well known and need not be repeated; (3) the alleviation of the underlying cause. It is this last phase which must be effectively handled if we are to make any permanent headway in helping these individuals.

Regarding treatment, a few generalities should be borne in mind. First, treatment of alcoholism is a long, drawn-out affair. It is full of ups and downs and at times not too rewarding. The physician for his own peace of mind should understand this or he may become too frustrated to be of any help to the patient. I am sure many physicians have worked hard with these individuals, have been taken in by their apparent sincerity and pseudo-insight, only to learn that the patient stopped at the first bar on leaving his office. Second, the physician should know why the patient wants help — is this wish sincere, or is it forced upon the patient? Moralizing about the problem is fruitless. The patient will have heard all of that before the physician sees him. His self-esteem will be low and any sermon will only generate further feelings of guilt with anxiety to which he will probably react by resorting to the best method he knows of relieving this state, namely liquor. Third, generally hospitalization in a psychiatric institution or a psychiatric ward in a general hospital is the optimum place to institute treatment. It is assumed, of course, that in such a place the personnel is trained and sympathetic with the problem. Here the individual is removed from the environment which has been instrumental in bringing his anxiety to the point where he cannot handle it. He can relax and treatment of a psychiatric nature can be instituted.

Psycho-therapy should start from the time the patient is first seen. Naturally, in the first phase or phase of intoxication the only psychotherapy is that of reassurance. Many are in a panic state and any indecision on the part of the physician or personnel increases this panic. Keeping in mind that a great many of these patients really do not want help other than recovering from the hang-over, the therapist will be called upon to use all the ingenuity he can muster. It is, of course, assumed that the therapist is really interested in the patient. If for some reason the patient evokes too much anxiety in the therapist, then he should be referred to someone else. Feelings of pity and condescension must be avoided. Above all, there is no place for the use of threats, real or implied. The patient must be made to feel he is an individual, who is ill and the therapist is understanding and wants to help.

During the course of the interview the therapist will have to make some plan. Certain individuals will do better in group therapy, while others will continue to need individual attention, or a combination of both may be used. The type of therapy will depend to a large extent upon the patient and his needs, the amount of time available and the orientation of the therapist.

Many cases, upon leaving the hospital should be seen on the outside either by a psychiatrist or at a psychiatric clinic. Rarely a patient stays in a hospital long enough to affect a cure. Usually, the most that can be achieved is to start the patient going forward.

The nature of the treatment will have to be further fitted to the individual. Some cases, carefully selected, may benefit by the aversion or conditioned-reflex method. This should be accompanied by at least superficial psycho-therapy, if we expect the patient to have any permanent results. In some cases therapy in the nature of psycho-analysis may be necessary. It would seem, at least at this stage of our experience, the patient must learn to accept the fact he can no longer use alcohol — in other words, his first drink is his downfall. It would be wise to make full use of Alcoholics Anonymous, a group of former alcoholics, who have joined together to keep themselves and others suffering from the disease, in rehabilitation. However, all forms of successful treatment will depend on the reeducation of the individual.

In conclusion, alcoholism is a problem of prime importance to the physician. It is essentially a medical problem, not a moral one. It is symptomatic of a deep seated personality disorder, in which the best hope of cure lies in repair of the Personality defect.

REFERENCES

Bleuler, Eugen: Dementia Praecox, Internat. Universities Press, N. Y., 1950.

Humphrey, William V., Proceedings of the First Industrial Conference on Alcoholism, Chicago, 1948.

Lernere, Frederick & Voegtlin, Walter: An Evaluation of the Aversion Treatment of Alcoholism, Quart J. Stud. Alcohol, 11: 198, June, 1950.

McCarthy, Raymond: Group Therapy in Alcoholism, Quart. J. Stud. Alcohol, 11: 309, June, 1950.

Noyes, Arthur P.: Modern Clinical Psychiatry, Philadelphia: W. B. Saunders Co., 3rd ed., 1948.

Osborn, Leslie: New Attitudes Toward Alcoholism, Quart. J. of Stud. Alcohol, 12: 58, Mar., 1951.

Seliger, Robert: The Problem of the Alcoholic in the Community, Amer. J. Psych., 95: 701, Nov. 1938.

Wall, J. H.: Psychotherapy of Alcohol Addiction in a Private Mental Hospital, Quart. J. Stud. Alcohol, 5: 547, 1945.

AN ADOLESCENT BEHAVIOR PROBLEM IN A GIRL

O. Eugene Baum, M. D.,*
Farnhurst, Del.

Adolescent maturation is difficult enough to understand in the relatively normal girl, but where there is maladjustment and delinquent behavior, the problem becomes extremely challenging and often most difficult to handle. We are frequently confronted with just such problems at the Mental Hygiene Clinic of the Delaware State Hospital.

The following case report is being presented therefore to demonstrate how one of these problems was handled in cooperation with the staff of the Woodshaven School for Girls.

---

*Part-time Psychiatrist, Mental Hygiene Clinic, Delaware State Hospital.

J. B., a 14-year-old white girl was first referred to us by the court in December 1949 for incorrigibility. She had violated probation, stayed out late at night, and actively rejected the home situation.

The second oldest of four female siblings, her present difficulties started following the separation of her parents during the previous year. J. B. found the situation unbearable. "I don't like to stay home because I can't get along with my parents. They hate each other. My father often says that I 'should go to the dogs' and threatens that I will 'end up in a reform school.'

J. B.'s mother had been a "graduate" of the reform school for girls. She was there for three years, and on leaving in 1930 she married. The court referral described this mother as an "immature, unstable woman with depressive spells. When she got drunk (which was often) she was entirely out of contact with reality. She can fly into rages, tear clothes and become wholly unreasonable."

The father had always been a chronic alcoholic but at the time of J. B.'s referral he had joined Alcoholics Anonymous. He was strict with the girls, but his own behavior was far from exemplary. He often came home drunk openly demanding sexual intercourse with his wife.

The developmental history of J. B. is sparse (not taken by our social service department) but presumably her birth was within normal limits. However, she was described as always being a nervous child. She was restless, had nightmares and enuresis. The latter resulted in considerable conflict with her mother and increased the feeling of rejection. J. B. often turned to the father for support and he apparently was more understanding. Two incidents — double pneumonia at age 4-5 and an appendectomy at age 7 — stand out because she received more attention at those times, especially from the mother, than at any other time. She often clenched her fists and talked and jumped during sleep. There was also occasional sleepwalking. In school J. B. was often confused and did poorly. (See psychological summary) This further increased her feeling of inadequacy.

In the initial psychiatric interview she was seen to be a rather attractive girl of slender habitus (small hips, average bust) whose appearance was somewhat marred by two missing upper front teeth. Her dress and cosmetic makeup as well as her manner were seductive in nature. She verbalized hostility freely but in an ambivalent manner and without adequate affect. At times she giggled in a silly way. Her thinking and judgment were defective. She tended to be circumstantial. But she did recognize that her home environment was not good for her and wanted to leave. There were obvious manifestations of a severe personality disturbance with weak ego integration, severe though spotty superego, and strong instinctual drives. Ambivalence, inadequate ego ideals and sexual confusion were paramount.

Psychological examination revealed low average native endowment with marked inability to make practical judgments as well as difficulty in finding hidden relationships in her environment.

The Electroencephalogram (not available at the initial staffing) demonstrated fast frequency low voltage waves which dominated the tracing. Also altered cortical excitability was in evidence. The electroencephalographer recommended suppressive therapy.

At staff conference it was agreed to recommend that J. B. be removed from the home environment and either placed in a good foster home while receiving treatment at the clinic or that she be sent to the Governor Bacon Health Center, where maladjusted children were treated up to the age of 16. However, at the specific request of the father the court agreed to send her to Woodshaven School for Girls (delinquent type). This school then sent her to us for psychiatric treatment with the note that "she was extremely loud, talkative and wanted to be the center of attention."

During the first 13 visits to the clinic on a weekly basis, J. B. was seen in group therapy together with 5-6 other girls from Woodshaven. During many of the hours she was very exhibitionistic, monopolizing the discussion, acting silly and often in a disorganized way.

She tended to act out sexual phantasies and often started the discussion around sexual topics. Once she sucked on a balloon with ecstatic glee and when it was suggested she might like the therapist to bring her a milk bottle and nipple, she said she was thinking of something else he might give her, much to the amusement of the other girls. After about the sixth interview the therapist had to point out to her that it was difficult for him and the others to participate if she were going to do all the talking and acting out and emphasized the group relationship. She resented this, sulked a little, indicated she would not come back. She missed the next appointment but then came again and followed through though not quite so out of hand as previously. After the interview she revealed privately to the therapist that she only talked about sex so much in order to keep up with the others and that actually she had not been sexually promiscuous. When dilatin was used for suppressive therapy she did quiet down. (To her unconscious it probably meant a gift and special attention from the therapist.) But then later she revealed that she usually had not taken the capsules after saying they had helped. Finally it was decided to treat her individually.

For the first individual session she was silly, disorganized in her thinking, impulsive, circumstantial, spoke under pressure of speech and demonstrated flight of ideas. She said she "felt like three different people, sometimes younger, sometimes older and sometimes like herself." There was little evidence of adequate ego and she gave the impression of psychotic thinking, manic in type. She verbalized hostility freely. In the next session she verbalized a great deal of aggression toward the personnel at the school. She asked many questions but then quickly answered them herself. Suddenly—"Tell me the truth Dr. Baum, am I off the bean?" She came in with her body marked up with razor blade scratches and cuts at the third session. She wanted to know what made her do such things. Her extreme need for love, and attention were pointed out, as well as the desire for approval of the group which made her very suggestible and exhibitionistic. The sado-masochism was not discussed. Throughout the interviews this therapist emphasized again and again his confidence in her, identified with her freely, but at the same time whenever reality could be pointed out to her this was done.

In the fifth interview she described herself as "nuts." She wants to have a "father who would smack her and teach her the right things." (need for punishment — reaction to permissiveness of therapist)

Also "sex was to be used." "What's my old man yelling about. He's made four (kids) and I haven't made any yet." "I will give them till January (to get me out) or they can kiss my rear." She resented their trying to play momma and poppa to her. "He's nothing but a kid himself." "I'm happy on one side and sad on the other." (Often J. B. laughs inappropriately) Hostility was freely verbalized but as yet affect was shallow and displaced. "I think I need an operation cause I know I'm nuts. I need to be in a room by myself."

During the following hour, J. B.'s seductive behavior was discussed as well as her phantasy that all men could me "made." Now as often, she expressed her distaste for those "queers." ("girls who put their arms around you or are around when you are undressing.") Her own homosexual impulses were not discussed.

Two interviews later — "I don't fart around . . . when I go home I go where I want and I get what I want." Sibling rivalry was expressed against "those snots up there who have been there less time than I have and have jobs." She was very disturbed during this hour and indicated she must be nuts because she bends forks and breaks glasses. She wanted to be sent to Farnhurst or Gov. Bacon Health Center. (Other girls in treatment actually did think that J. B. was "nuts" because of her overtly disorganized behavior.)

The note in the ninth interview reveals that she is still trying to impress the therapist that she was crazy and that she "had bad in her, was a kleptomaniac and was sex crazy." After all, "they all tell me I am crazy and talk about me." (It was the therapist's impression that because of the individual attention and understanding that she was getting that anxiety and guilt were being mobilized. The desire for transfer to a psychiatric facility was probably a positive transference reaction as well as masochistic.)

During the tenth hour she was encouraged to talk about her family. She said she "was sex crazy and that her sisters were crazy and sluts. My mother and father are crazy. They are pigs." (When first asked about them she said they were dead). With regard to what she is learning at Woodshaven she said defiantly "anyone can be good if they want to and anyone can be bad if they want to, but I am not going to be good for them." (re Woodshaven)

Now, as frequently, the therapist discussed with her the significance of love and understanding in childhood for the development of security.

During the following hour she described how she often squealed on her mother (with obvious glee) when the former ran around with soldiers, and how her father beat her mother up. "I spit in her face." "He paid me for telling on her." Hate for the mother was freely verbalized. J. B. felt the mother had rejected her. She always turned to her father. In addition J. B. asserted that she provided women for her father. "I told you I was crazy, Dr. Baum. I am just plain ignorant." In the next few hours she continued in the same vein. She described her father as younger and better looking than the mother. J. B. often went out with him, including moonlight rides with dancing on boat trips. Often other boys tried to make her and the father had to "protect her." She voluntarily denied that her father had tried any "dirty stuff." He was often mistaken for J. B.'s boy-friend. She laughed with pleasure in describing the hostility of her father for his wife. But at the same time said she often caught them having sexual intercourse. (The above clearly illustrated the Oedipal phantasies.)

On the 14th individual visit, J. B. was actually depressed. This was the first time that she showed an appropriate affective reaction. She was not even wearing any makeup, which was most unusual for her. When the examiner greeted her, there was no response. She was lacrimose and verbalized hostility freely against everyone at Woodshaven and particularly against her family. She called them every name she could think of in the best appropriate slang. They were "whores, no good." Her father was once in the newspapers because of a fight. She wishes that he had died. They had promised to come to see her on Sunday but did not appear. She was waiting and sat waiting all day. She hated them for this. They also promised to send some clothes but didn't. She used to steal because "they would not give me clothes." Since they still were not giving her clothes she "would steal again." J. B. stated she was crazy and if they didn't believe it, she was going to show them. She wished that she were dead. Although there was still disorganization in her thinking the significant thing was that affect and ideation were closely juxtaposed. J. B. was asking for love and faced her feelings instead of suppressing and displacing them. Anxiety, insecurity, need for love and frustration with resultant hostility and guilt were being faced. The reality of the home situation was more clearly in focus for her. (The therapist was sufficiently concerned about the intensity of the reaction to contact the superintendent of the school to keep J. B. under observation. Possible transfer to a psychiatric facility was considered.)

At the next interview J. B. was calmer than at any other time. But when the therapist attempted to point out the gains made she felt impelled again to prove how "nutty" she was, but it was half-hearted. Confidence in J. B. was reemphasized. She was able to discuss her needs for affection and attention.

During the next hour she was exhibitionistic, hostile and had the "don't give a dam" attitude. Hostility was verbalized to therapist but only with encouragement. "Don't worry about no one but myself. They can all go to hell."

Next hour she continued her "don't give a damn, they can kiss it attitude." Again her need for affection and understanding was underlined and it was pointed out that acting out hostility would bring hostility in return. Meanwhile the school indicated that J. B. was much improved.

During the 18th hour J. B. spoke in a more mature, organized way than at any time since coming to the clinic. She showed fair insight into her various problems. She appeared to have developed enough integration of ego and superego so that she could stop and think after her initial impulsive reactions. Her gains were again pointed out. She, for the first time, emphasized the therapist's understanding attitude.

In the next hour she continued to relate well to the therapist and continued her improvement at the school. She verbalized hostile feelings against family's lack of interest but in a more realistic manner, though still ambivalent.

She gauged her improvement in the eyes of others by describing how now when she walks by the boys in the neighborhood in a dignified manner they do not call her tramp anymore. Or if anyone does, the others defend her. She was obviously pleased with this. (improved self esteem)

In the following hour I had an opportunity to talk with J. B.'s father. He was still with A. A. at that time. Mr. B. revealed considerable anxiety and guilt about his relationship with this daughter especially with regard to his drinking and neglect of her. He confirmed the fact that the mother and oldest daughter reject J. B. He indicated that the present home environment was unsuitable.

The last two hours were spent reviewing realistically the home situation, her gains in treatment and at school, and plans for future as well as termination of treatment at the clinic.

She voluntarily raised some questions about her younger sister who was behaving the way she used to and wondered if she could also be treated.

It was recommended to the school that J. B. be considered for partial parole.

A follow up recently, 6 months later, revealed that J. B. had been working for some time on a full time, living-in job which included care of children. She was on complete parole. She has been getting along very nicely and is making a satisfactory adjustment. Seductive, exhibitionistic behavior toward boys still exists but apparently is adequately controlled. Meanwhile the father has dropped out of A. A. and is alcoholic again, and the younger sister is at Woodshaven and in treatment with another therapist.

The dynamics in this case have only been touched on as the problem was presented primarily to demonstrate an approach to treatment.

The fine supervision by the staff of Woodshaven School for Girls and their cooperation with this therapist facilitated the positive result in this girl's treatment.

A NOTE ON THE PROBLEM CHILD

William S. Robbins, M. D., *
Farnhurst, Del.

A problem constantly before the attention of the general practitioner is, "what to do with the disobedient, destructive, defiant, wilful or non-conforming child?" The boy or girl who fails to achieve the degree of conformance or attainment required by the parent — whether or not they are aware of this demand — is a continuing source of disappointment to the parent. This nidus of disappointment, like an acute inflammatory process, spreads in all directions and sets in motion a continuing cycle of events that lead to mounting anger and tension in both parent and child, to the imposition of many restrictions, the use of all available forms of punishment, recourse to the authority of the courts, but finally — and most often — to the office of the trusted family physician for his help.

The source of this struggle between parent and child is to be found in the parental attitudes toward life and their effect on the interpersonal (child-parent) relationship. Understanding of these dynamisms, as in all disease processes, is a prerequisite of rational therapy and this understanding will reveal why punishment and privation so often fail to produce the desired result.

D. S., a five-year-old boy, was referred to the Mental Hygiene Clinic by a nearby agency. Mrs. S., the mother, had approached this agency for help because she was having so much difficulty managing the boy. As she described him, he was in complete rebellion against her. She was unable to tell him anything or to control him in any way; he was unresponsive to every type of discipline and

---

*Part-time Psychiatrist, Mental Hygiene Clinic, Delaware State Hospital.

privation imposed, resentful of restriction and reacting with increasing stubbornness and anger. There appeared to be nothing in this child that pleased the mother at the time the problem was presented in the Clinic.

An examination of this boy revealed that he was a healthy, calm, really self-confident youngster of superior intellectual ability. Exploration of the family and school situation brought to light the fact that the boy was making a good adjustment in every area — except in relation to the mother. Attention was then directed to Mrs. S.

Mrs. S. was seen twice for short periods of time. These two visits were almost a month apart. The first session was devoted to allowing free expression of the problem. She was encouraged to paint the picture exactly as she saw it both at this moment and as she felt it had developed in the past five years. The discussion gradually was turned toward Mrs. S's own present life and background and it became apparent that she was a very anxious, unhappy woman. Mrs. S. had come from a home in which she always occupied a subordinate position, in which she was restricted and guided in every sense of the word, and had approached her adulthood, marriage and parenthood without ever having had an opportunity to exercise independent judgment or to assume full responsibility for the consequences. This background, in her case, was conducive to the development of an extremely selfish attitude toward life wherein one's needs either were satisfied immediately or anxiety ensued in conjunction with hostility toward the frustrating individual.

This attitude, which made the necessary material sacrifices seem so burdensome, appeared to be the crux of the problem. The idea was presented to Mrs. S. for consideration as a possibility, it being much easier for Mrs. S. to tolerate this estimate of her attitudes in this fashion rather than to confront her with it as a fact. The latter method would have made her feel as if she were being criticized. A discussion of this resulted in the mother's realization that what she was responding to and becoming hostile about was not the child, himself, but the fact that his being in the world and his care made it necessary for her to forego, on a more or less temporary basis, the satisfaction of her own needs. The more he resisted her, the more time it was necessary for her to spend with him and the net result was a state of increasing anger. The child was reacting not to her demands, per se, but to the attitude which attended them. He met hostility with hostility and threats with defiance.

An interpretation to the mother of these motivations and responses in herself, brought an immediate improvement in the relationship between mother and son. Now she could see him as an individual — as a boy — as her son — not as something that stood in the way of her own satisfactions.

This relationship and the psychology of the personalities involved is far more complex than is indicated in the foregoing. However, this case does serve as an example of the interplay of forces in the relationship of a mother to her children, and, that at times, the relationship can be improved by a fairly direct therapeutic approach. This is possible only where the mother is in a receptive state of mind, actively seeking help and where the dynamic situation is thoroughly appreciated.

TWO CASES OF JUVENILE SCHIZOPHRENIA

Tatjana Thaller Canki, M. D.,*
Farnhurst, Del.

Since 1908, when Sante De Sanctis introduced a concept of dementia praecocissima to differentiate the forms of schizophrenia occurring early in childhood, the problem has been largely discussed and many cases reported. Two cases observed in the Delaware State Hospital, studied for years and treated with all methods at our disposal are reported.

Case 1. Mary Frances V., fourteen years of age, was admitted to the Delaware State Hospital on November 1, 1947. The family history is negative for nervous or mental illnesses, maladjustment or feeble-mindedness. Patient was the second of three siblings. Her birth was normal, and she started to talk at the "normal age," and started to walk at twenty months. Nocturnal enuresis continued until the age of nine years. She had always been a difficult baby and child; was moody, without sense of responsibility, and especially jealous of her older sister. She never played with other children or with dolls and other toys. Most of her play consisted of "make-believe." She never seemed to be a happy child. Patient had the usual childhood diseases.

---

*Junior Assistant Physician, Delaware State Hospital.

Patient has always been a difficult child, but her parents did not realize that she was sick until the age of six when she started school. There she could not learn as other children did, and seemed fearful and apprehensive of her environment. She talked to herself for many years and pretended to be various people, particularly movie stars. She has shown no noticeable preference for either parent.

Because of her difficulty in school, she was referred to the Mental Hygiene Clinic in October of 1941, when seven years of age. On the psychological test she was considered to be of dull average intelligence with a rather severe mental dysfunctioning, emotionally disturbed and fearful of failure. For seven months she was given individual psychotherapy at the Mental Hygiene Clinic.

Since that time she has been placed in special schools for problem children, and has also been seen regularly by a psychiatrist. However, her progress in learning has been poor. She manifested difficulty in adjusting, and displayed nervous habits such as pulling her hair and talking to herself. With many ups and downs, the next six years passed. At the age of nine or ten, she began masturbating. Her menses were established at twelve years of age.

In September of 1948, she became more upset than usual; became mute, refused to eat and would not put on her clothes. This determined her hospitalization. When seen in the hospital, she manifested manneristic behavior, repetitive conversation; and stated that she heard voices for a long time. These voices accused her of being wicked, and showed evidence of being jealous of her because she had stones in her hair and also stones in her back. She appeared very fearful and apprehensive, but attempted to answer all questions.

On physical examination, she appeared to be of asthenic habitus. Examination was negative. Laboratory findings including urinalysis, count of blood cells, blood chemistry and serology, spinal fluid analysis were within normal limits. X-ray of chest and the skull was negative. A diagnosis of schizophrenia, catatonic type was made.

Electro-shock treatment was given without improvement except that she did begin to eat. She became more uninhibited in her behavior. She remained hallucinated and delusional, manneristic and autistic. She had periods of agitation, destructiveness, aggressiveness and impulsiveness which were only temporarily controlled by electro-shock treatments. From January to April of 1951 deep-coma insulin was given with some improvement in her behavior.

She is now 17½ years of age. She is institutionalized. She is very psychotic and her prognosis is poor. She has had psychotherapy since seven years of age, had special educational attention and later had electro-shock treatments and deep-coma insulin treatments.

Case 2. Nat E. was committed to the Delaware State Hospital on December 18, 1947, when he was twelve years of age. Family history is negative for mental or nervous diseases, mental deficiency or alcoholism.

Patient was the only child. Birth was normal and early development seemed entirely normal except for the fact that from the beginning he was a restless sleeper, and as a baby he banged his head against the wall or the side of his crib until he was eighteen months or two years of age. He used to get up on his hands and knees in his crib and rock back and forth; he broke two iron cribs before he outgrew them. At the age of three, he outgrew this habit. When he was five years of age, he became a special behavior problem because of continuous restlessness and nervousness. He had temper tantrums, yelled and cried, and had frequent nightmares. He would not sleep, but would walk around his room talking to himself, or would tear up the bed sheets or break the furniture. Because of this behavior, he was placed in special schools for problem children from the very beginning. In 1946, when he was eleven, his I. Q. on Binet classification was 80; dull normal group. The school physician reported the following: "Rorschach shows definitely a warped personality with marked psychotic trends. He is exceedingly nervous, irritable and it is impossible to keep him in the classroom. He shows slow but steady deterioration, with marked evidence of psychosis. Apparently he is suffering at times from auditory hallucinations. He is greatly over-stimulated, showing aimless activity." At that time, he was considered by the same physician as a high-grade to borderline type of mental defective with psychosis, probably due to abnormal intra-cranial pressure.

He has been examined at the Mental Hygiene Clinic where on repeated tests, he was found to be of high average native endowment. His perceptions of reality were obscured, and his physical proficiency reduced.

Nat spent another year in the special school, and in December of 1947, when twelve years and three months of age, he was committed to the Delaware State Hospital because of hallucinations and irritability. Patient is violent at times destructive in regard to clothing and furniture.

Physical examination showed him to be of asthenic habitus, fairly well developed and fairly well nourished. Examination was negative and no abnormal neurological signs or symptoms were noted. Eyegrounds were normal. Laboratory data including urinalysis, count of blood cells, Hgb, blood urea nitrogen and sugar, blood serology and spinal fluid analysis were all within normal limits. X-ray of chest and skull was negative.

On mental examination the examining physician had the following impression: This is a highly intelligent boy who shows marked anxiety tension and restlessness, but who is quite capable of controlling himself. He seems to be abnormally pre-occupied with himself, and there is evidence of lack of social adaptability. One may call his present state of mind an anxiety state but one has to keep in mind that some of his peculiarities are suggestive of a schizoid personality. He was correctly oriented.

A few days after the mental examination he became restless, demanding, broke window panes, became combative and used obscene language, and after a few days of observation, he was considered psychotic. Since then he has alternated periods of relative improvement when he is easy to manage and periods when he is acutely disturbed and violent. His good periods never lasted longer than three weeks, and then he showed pre-occupation with certain stereotypical ideas, asking the same questions ten to twenty times during one interview, and interjecting them suddenly without adequate reason. His interests were studying mathematics, reading vocabulary or crocheting.

His restlessness was treated with sedation. Dilantin proved ineffective. A special teacher was appointed who came regularly to spend a few hours with the patient. His interest remained superficial, and he did not seem to benefit. Special attention was given by the personnel to this patient. He was anxious to receive it but he did not develop attachment to others. Because of his severe hyperkinetic spell, he was given a number of electric-shock treatments. Benefit was extremely limited, and it was not worthwhile to continue the treatment. Psychotherapy was of no avail.

From April to June of 1950, deep-coma insulin was given. He improved only temporarily in his behavior. He had auditory hallucinations.

In December of 1950 he had four convulsive treatments at the University of Pennsylvania, produced by oxygen inhalation in the pressure chamber. He remained one of the most difficult management problems in the hospital and, not too long ago, he swallowed a dozen hooks and springs which he had removed from his bed.

In April of 1951 transorbital leucotomy was performed. Three months later he is still manageable on the ward. He remains hallucinated in auditory sphere and unable to concentrate.

While there has been some doubt as to the presence of undefinable organic factors, it is the concensus of opinion of the staff members that this patient suffers from a malignant type of juvenile schizophrenia. There has never been any evidence of encephalitis or other brain diseases, and there has been no spontaneous seizures. The electroencephalogram shows "an altered cortical excitability" but not characteristic of any specific brain disturbance.

THE NECESSITY OF INDIVIDUALIZATION IN INSULIN-COMA THERAPY

N. T. Arikian, M. D.,*
Farnhurst, Del.

Since Dr. Manfred Sakel's discovery of insulin-coma therapy for schizophrenia and other mental diseases this treatment is of global importance in the practice of psychiatry, and it has appeared in medical literature in thousands of articles, papers, magazines and text books in every country on earth and in many different languages. This contribution to medical science has aroused many problems, some solved — some not solved.

The intention of this article is to cause an interest in medical circles of this problem of individualization in insulin-coma therapy.

In the course of insulin-coma therapy, the patient under treatment passes through a long procedure of different reactions and different levels of coma until the deepest level of coma is reached. Authors have divided this procedure into as many as five different stages.

The necessity of individualization in insulin-coma treatment resulted from the fact that the same patient each day was awakened at a different level of coma and then exhibited a different mood and behavior commensurate with the depth and duration of coma from which he was awakened on that day.

The following examples, a few from many, will prove this fact:

A female patient with the diagnosis of schizophrenia, simple type, with the following symptoms: lack of interest in work which she liked before the onset of her mental illness, lack of ambition to do anything, introverted, could not face situations in every-day life, retreated into the realm of fantasy, was indifferent to environment, unwilling to return to the world of reality, etcetera. When this patient was awakened at the end of the second stage of insulin-coma, she displayed interest in environment and ambition to do various types of work. She was not as much retreated into the realm of fantasy, and began to come back to reality. However, when she was awakened at the end of the fourth or fifth stage of coma, she was depressed, introverted, and irritable, thus showing changes not favorable to her mental health.

Another patient diagnosed as paranoid condition had the following symptoms: He stated that he was constantly followed by people who spied upon everything he did, and that particular people were against him and were threatening to poison his food. He changed jobs frequently because he felt that people were hostile toward him. During his insulin-coma therapy, this patient was first awakened at the end of the second stage of coma, and then he exhibited more pronounced paranoid symptoms than before treatment. Following this the patient was taken to the fifth or deepest stage of coma, and when awakened here he showed a lessening of his paranoid ideas and trends. He started to socialize, become more reasonable, and consequently showed a marked improvement over all. This patient showed improvement only when his insulin-coma was terminated in the deepest stage, in contrast to the previous case which showed the most improvement by being awakened at the end of the second stage of coma.

Another patient with autistic and catatonic symptoms, awakened at the end of the second stage of insulin-coma, exhibited better contact with reality, and conversed well. His emotions were stimulated and his previous picture of rigidity and inactivity was modified to one of jovial co-operation. When this same patient was awakened at the end of the fifth stage of insulin-coma, he showed no contact with reality, was mute, withdrawn and depressed. When awakened again in the second stage of the coma on subsequent days, the patient again showed contact with reality, conversed well, etcetera. Continued awakening daily at the end of the second stage resulted in almost manic behavior reaction. Therefore, to obtain a more normal emotional balance, the patient was not awakened until the end of the fourth or fifth stage of coma during the remaining treatments. Through this procedure the patient was directed to a satisfactory behavior pattern by the insulin-coma therapist.

It should be well understood that in insulin-coma therapy, each of the individual patients, although they may be in the same diagnostic category, must be considered separately as an individual, and treated according to the specific requirements of his mental condition, which are individually variable. Statistical reports about the insulin-coma therapy give different percentages of results. Among the reasons may be the lack of individual application of the insulin-coma therapy.

---

*Resident, Delaware State Hospital.

Summary

1. There exists a relationship between the mental changes of the patient under treatment and the duration and depth of the insulin-coma in which the awakening from the coma occurs each day.

2. Patient's mental condition is directed and regulated by the different depths and duration of the insulin-coma.

3. For this reason, the insulin-coma therapist has to find out the optimum of the depth and duration of the coma peculiar to the individual by thorough observation of the patient's reactions during each treatment in order to determine the most favorable depth and duration of coma for the following day of treatment.

4. Since there are great differences in the reaction of the patients, it is necessary for the therapist to observe closely and evaluate each patient's reactions to the treatment. Therefore, a therapist who has the knowledge and experience with individual insulin-coma treatment will be successful in obtaining the best results.

AN IDIOT-SAVANT?

Joseph Jastak, Ph.D.,*
Farnhurst, Del.

Carl was referred to the Mental Hygiene Clinic at the age of 11 with the parental request that he be committed to the Colony for the Feebleminded. He had previously, at the age of 4, been diagnosed as feebleminded in another clinic. As a result, he had spent several years in private schools and in a State Training School for mentally retarded children.

At seven, he had been examined at the Delaware Mental Hygiene Clinic. His Stanford-Binet I. Q. was 67, but the psychologist concluded that the boy was emotionally disturbed and not intellectually deficient. At this particular interview his behavior was thoroughly unpredictable. He was overstimulated to the point of violence. He ran from door to door, turning the knobs and keys, shutting and opening the doors, and touching the various pieces of furniture in the room, without any apparent reason. He had few social inhibitions. He would turn to people for the immediate satisfaction of his irresistible impulses. Otherwise, he disregarded their pleas or presence in favor of aimless rushing.

His language abilities were found to be extremely defective. The intelligence test gave highly variable results — some exceptionally high, most of them very low.

When Carl was examined again at the age of 11, he had grown in physical dimensions and sedateness. However, some degree of dissipation and spontaneity were still observable. Erratic ideation had partly replaced erratic behavior. Unimportant and fanciful associations were in evidence as he tried to answer questions. He was unusually imaginative and stereotyped at the same time.

His speech was still poorly articulated, but fairly intelligible as a result of many years of diligent speech therapy. He accurately reproduced some unusual bits of knowledge, but the majority of his responses were either wild guesses or irrelevant free associations. According to him, "Taro" was the capital of Japan, "soldiers" invented the airplane, "Dolores" wrote Hamlet, and "George Washington" discovered the North Pole.

On reasoning tests, he used the same meaningless phrases to explain many unrelated problems. Superficially, he had improved since the age of 7. He was now quieter, more willing to conform, and better able to concentrate on assigned work. At school, he had learned in reading and spelling as much as is expected from boys of average intelligence. His achievement in arithmetic was superior. His intellectual endowment was considered to be at least high average, but he was thought to be suffering from a mental condition which beclouded his reality perceptions and interfered with normal motor functions, including those of expressive language.

Carl was admitted to the State Hospital at the age of 13 because of persistent destructive tendencies, uncontrollable nightmares, and episodic assaults upon his parents. His personal history records a very early onset of overactive and combative behavior. Due to the great violence of his outbursts he never attended public school. Though unusually intelligent in some respects, he could not dependably concentrate on his lessons or adjust to ordinary social amenities.

---

*Chief Psychologist, Delaware State Hospital and Mental Hygiene Clinic.

Since admission to the hospital he has been subject to unmitigated, compulsive behavior. If frustrated, he becomes dangerously explosive. He has had electroshock, insulin coma, convulsive treatments produced by oxygen inhalation, and leucotomy. He has not responded to any of these treatments. He presents one of the most difficult management problems in the hospital. He is bothered by delusions and hallucinations. Some time ago, he has swallowed a dozen hooks and bedsprings which had to be removed from his stomach by surgery.

In arriving at a psychiatric diagnosis organic problems were given due consideration, as the electro-encephalogram showed "abnormal high voltage slow waves of 3, 4, and 5 per second with occasional spike formations found generalized throughout both hemispheres." These grossly abnormal tracings "are indicative of an altered cortical irritability." The consensus of staff opinion was that this boy suffered from a malignant type of juvenile schizophrenia.

Carl is now 16 years old. During the past three years he has had three psychological examinations consisting of aptitude tests and the Rorschach. The results were in all three instances strikingly similar. The aptitude pattern is recorded in the circular graph of Figure 1.

There were no significant changes in the psychometric results following insulin shock or leucotomy. Carl is still the bright boy who acts like a moron. Changes in the contents of his behavior and thinking have undoubtedly occurred with age, but the structural forms of to-day are uncannily similar to those displayed at the age of 11 or 7 or 4. He has had intensive psychotherapy while away at school. Neither psychological treatment nor strictly medical attention have had the desired results.

The psychometric graph portrays Carl's strangely disparate abilities which are closely tied up with his chronically abnormal personality structure.

Figure 1

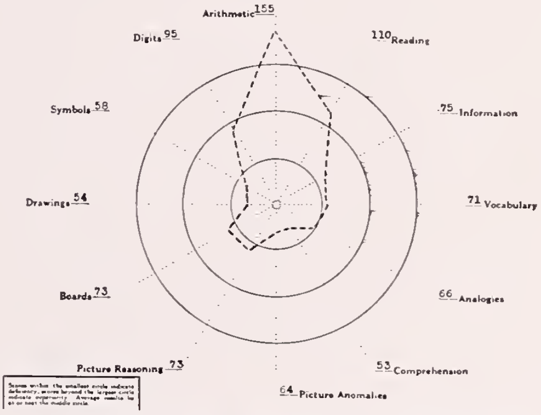


Fig. 1. Graph showing the distribution of abilities of the patient discussed in this paper. Arithmetic is very superior. The related abilities of reading and digit span are average. All other abilities are either inferior or defective.

Five of the measured abilities are very defective, four others are inferior, and three are average or superior. Carl's mathematical abilities are extraordinary. He has good motivational assets which, because of extreme, multiple character deficits, can be exploited only in the interest of compulsive, protective, and self-destructive mechanisms. The I. Q.'s of most idiot-savants rate them feebleminded. The idiot-savant is known as a person who excels in one ability and is defective in most other abilities.

Each State Colony has its maladjusted geniuses who perform mental acrobatics or acts of manual skill far beyond the capacity of average mortals. Despite their breath-taking achievements, or perhaps because of them, they are unable to meet the simplest realities of daily living. The peak of excellence is often in the mathematical area, but it need not be there. Exaggerated aptitudes may occur in any one of the abilities listed in the graph. Persons with downward peaks, diametrically opposite to the one here illustrated, are not uncommon.

Abilities thus distributed are nearly always a symptom of severe and chronic personality disturbances which are refractory to known methods of therapy. The parents of such children report the presence of mental and physical debilities from birth on. The disorders become aggravated in the course of development and training partly because neither parents nor experts know what the proper methods of treatment are or what the education of such children should be.

The so-called idiot-savant is practically never feebleminded. He is merely an extreme case of the variable personality patterns which characterize all human beings. He is afflicted with multiple deficits of unknown origin. The deficits are suggestive of both organic and functional illnesses. That the two may co-exist in the same individual is not always fully appreciated. The disorder which is observed last and which is superficially the most conspicuous is given diagnostic preference, even though the basic and original trouble lies far deeper than the side-effects seem to indicate.

A great deal of research, both physiological and psychological, will have to be done before we know how these "other-worldly" individuals come to be and how, if at all, they can be treated and trained to use their extraordinary potentialities for high-level cerebration which they seem to possess.

One fact seems to stand out above all else. They are not idiots, not even morons. They only act as if they were feebleminded because they are very, very ill from the very, very beginning of their unfortunate lives.

PSYCHOLOGICAL STUDY OF CHILDHOOD SCHIZOPHRENIA

A Case Report

W. H. Tracy,*
Delaware City, Del.

The incidence of childhood schizophrenia is still an unsettled question. It is considered to be extremely rare by some authorities. Others seem to feel that it occurs more commonly than is generally recognized. In any case, it appears that until fairly recently many children who are basically schizophrenic have not been recognized as such, but have been considered as suffering from various other conditions ranging from "feeblemindedness" through "epilepsy." Kanner has delineated early infantile autism as essentially a schizophrenic condition.[1] This represents a first step in clarifying the childhood schizophrenic syndrome. Other cases of pseudofeeblemindedness may too eventally be recognized as suffering from a schizophrenic emotional withdrawal.[2] The case to be presented in this short paper represents a patient who upon gross inspection appeared to be feebleminded. As a matter of fact, this patient was so emotionally disturbed that she actually was functioning, in general, on a mentally defective level. However, her low level functioning was not due to innate lack of intellectual equipment, but to severe psychotic disorder which had disrupted her intellectual, as well as her emotional life. The endeavor of the brief report to follow is to present data as to how phychological study contributed to the understanding of the schizophrenic maladjustment in this particular case. Also a few notes are offered as to the responsiveness of the patient to psychotherapy up to the present time.

The clinical picture of symptomatology differs between children and adults in schizophrenia.[3] As is to be expected, the older the child the more the symptoms will resemble those of the typical adult schizophrenic. With the child delusional material and symbolization are relatively more simple and naive than with the adult. Kanner presents Potter's list of reactions which are applicable to childhood schizophrenia. They are as follows: "1. A generalized retraction of interests from the environment. 2. Dereistic thinking, feeling, and acting. 3. Disturbances of thought manifested through blocking, symbolization, condensation, perseveration, incoherence and diminution, sometimes to the extent of mutism. 4. Defect in emotional rapport. 5. Diminution, rigidity and distortion of affect. 6. Alterations of behavior with either an increase of motility, leading to incessant activity, or a diminution of motility leading to complete immobility or bizarre behavior with a tendency to perseveration or stereotypy." [4] Kanner also notes that children cannot be divided into schizophrenic "types" as are adult patients. Some children deteriorate, in others catatonic features are frequently manifest, hebrephrenic fragmentations are found in some. Paranoid delusions, if found, are not systematized or fixed.[5] Lack of as clearcut schizophrenic signs in children as in adults makes the problem of diagnosis more difficult. With a less clearly defined constellation of signs difficulty is encountered in differentiating childhood schizophrenia from other clinical syndromes. Schizophrenia in childhood is probably most often misidentified with either, or both, of two conditions. These are, first, inherent, or real, feeblemindedness, and secondly, psychosis apparently resulting from organic deficit. In formulating diagnosis with our diversified patient population here at the Health Center we have found the necessity of combined, cooperative effort between the medical, psychiatric, social service, and psychological divisions.

---

*Acting Chief Psychologist, Governor Bacon Health Center

[1] L. Kanner, Child Psychiatry, pp. 716-720.

[2] L. Kanner, A Miniature Textbook of Feeblemindedness, pp. 10-11.

[3] L. Kanner, Child Psychiatry, pp. 710-712

[4] ibid. page 711

Clinical Description

The patient to be discussed in this paper is a twelve year old female. Matilda has been in residence at the Center for about ten months. She was admitted to the seizure ward because her mother's complaint that she was unable to keep up with her school work and that she had had "convulsions" prior to admission. No seizures have been observed during her stay here. Her ward behavior from the beginning has been unusual. In summary, ward observers considered her to be either feebleminded or psychotic, possibly both. No significant physical defects were discovered by the examining physician and the consultant neurologist. Psychological examination was requested by the psychiatrist in charge of the ward. The differential problem was one of ascertaining whether the patient was inherently mentally deficient with psychosis; brain damaged and psychotic; or suffering from childhood schizophrenia.

Psychological Study

As is our usual procedure, the patient was first administered our basic intelligence scale. The scale used was the Wechsler Intelligence Scale for Children. The Jastak Wide Range Achievement test was administered to ascertain level of achievement in basic school subjects. Study of the various quotients derived from the intelligence scale, and test behavior, indicated the need for further testing. The Rorshach ink blot test, the Bender-Gestalt Visual Motor test, the Strauss-Lehtinen marble board test, and drawings were therefore added to the battery. The reason for the inclusion of these particular tests should be revealed by the nature of the material obtained from each. [6] The results of the psychological study are presented in summary form: As far as "global," or overall, intelligence is concerned, the patient was functioning at a defective level in both verbal and performance areas. Her native capacity, or intellectual potentiality, appeared to be at least average, however.[7] Extreme subtest and factor "scatter" suggested severe personality disorganization. The patient was able to understand instructions and follow them through only in those instances where she felt so inclined. In other words, volitional effort was regulated by her attitudinal state of the moment. Her verbal responses requiring comprehension and judgement were not thought through logically and were highly autistically colored. Her achievement in school subjects was in general at the third grade level. The Rorshach test findings were characterized by perseveration, quick reaction time with little expenditure of energy, and inadequate form level. Her weak reality contact was well indicated on this test. The patient's Bender-Gestalt drawings, and drawings of a person, were primitive and suggestive of either emotional fixation or regression. On the one Strauss-Lehtinen marble board presented to the patient the pattern was copied reasonably well.

The subject's response to this test was not what one would expect from a brain damaged child. Reversal of the colors utilized on this test corresponded to a similar tendency toward reversal of colors on the block design test of the intelligence scale. Most likely this is another sign of schizophrenic negativsm. The patient's behavior during the examination was characterized by a fixed repetitive expression, a silly esoteric smile, grotesque moments, and bizarre verbalizations.

In summary, the examiner's impression on the basis of the psychological examination was that the patient was not inherently feebleminded, but that her global defective functioning was a consequence of psychotic disturbance. Nor did the psychological picture presented appear to be the typical "organic" one by any means. It is believed that the personality picture presented by this patient represents either emotional fixation at an early stage of development or extreme regression. In either case the psychopathology appears to be essentially schizophrenic with marked autism.

---

[5] ibid.

[6] A specific basic reference for each test used in this study is included in the bibliography.

[7] Joseph Jastak: "A Rigorous Criterion of Feeblemindedness," J. Abn. Soc. Phychol. 44, 1949, pp. 367-379.

In the presentation of this case to the staff for diagnosis the psychological findings were added to those obtained from the psychiatric and neurological (including an electroencephalogram) examinations, and the social history. The staff diagnosis was schizophrenia, thus corroborating the psychologic findings.

Present Status

Matilda was assigned to a psychotherapist.* He has been seeing her regularly for approximately six months. For the first four months she was seen once a week. Since then interviews have been increased to a twice a week basis. In all she has had to date approximately thirty hours of psychotherapy. On the basis of her ward behavior, classroom adjustment (she has recently been placed in a special class), and her family's judgement, Matilda has shown decided improvement.

Her psychotherapist shares this opinion, but believes that most of her improvement to date is still of a superficial nature.[8] Change in surface behavior and loss of symptoms has been quite dramatic. In his opinion her improvement is due to overall excellent care and sympathetic understanding received in the ward and special classes, as well as participation in individual psychotherapy. More intensive and continued psychotherapy for some time are necessary before Matilda will be ready to adjust adequately at home and be able to regain lost ground in school.

The writer has attempted to make, in summary form, two points. One is the importance of recognizing childhood schizophrenia in diagnosis, and two, the possibility of producing improvement in this type of case. Whether relatively complete adjustment is possible for Matilda remains to be seen.

REFERENCES

Bender, L.: A Visual Motor Gestalt Test and Its Clinical Use, Amer. Orthopsychiat. Asso., New York: 1938.
Jastak, J.: Wide Range Achievement Test, Chas. L. Story Company, Wilmington: 1946.
Idem: A Rigorous Criterion of Feeblemindedness, J. Abn. Soc. Psychol., 44: 367, 1949.
Kanner, L.: Child Psychiatry, Springfield, Illinois: Charles C. Thomas, Second edition, 1948.
Idem: A Miniature Textbook of Feeblemindedness, New York: Child Care Publications, 1949.
Machover, K.: Personality Projection in the Drawing of the Human Figure, Springfield, Illinois: Charles C. Thomas, 1949.
Rorshach, H.: Psychodiagnostics, New York: Grune and Stratton, Inc.
Strauss, A. A., and Letinen, L. E.: Psychopathology and Education of the Brain Damaged Child, New York: Grune and Stratton, 1948.
Wechsler, D.: Wechsler Intelligence Scale for Children, New York: The Psychological Corporation, 1949.

A CHALLENGE TO YOU, THE REFERRING DOCTOR

Marjorie Hubbard,* A.B., M.S.S.,
Farnhurst, Del.

How can you help your patient most when you refer him to the Mental Hygiene Clinic? Patients bring out some of the answers to this question both when they have been referred by doctors who have wisely counselled them through the experience and by those doctors who have not fully understood the clinic. After your patient leaves your office he continue to think; fear, anxiety and tension mount. Much of this could be avoided if in the first interview you anticipate some of the anxiety. Questions such as the following are important to your patient;—"Do you think I'm crazy?" "Isn't the clinic at the Delaware State Hospital?" "Will they commit me to the State Hospital?" "How are appointments made?" "How long will I wait for an appointment?" "What will happen to me at the clinic?" "Do I have to go?" "What happens after the diagnostic interview?" If it is a parent seeking help with a child the questions go further — "What will they do to my child?" "Will I know what they think is the matter with him?" "Do you think I'm a terrible mother when you suggest sending my child to the Mental Hygiene Clinic?"

The referring physician can be of invaluable help to the patient in accepting referral to Mental Hygiene Clinic if the time and patience have been taken to foresee the pitfalls that are the result of quick referrals. The clinic is only as strong as the referrals it receives and often times patients are lost through inadequate explanation. Since the referring physician knows the patient and already has his trust, he has the best opportunity to make the referral a success. He also knows when the patient needs the clinic and is ready to be referred. Generally speaking the referring physicians have made a valuable contribution to our service by the orientation they have given their patients who are coming out to Mental Hygiene Clinic. We, the staff of the clinic, also appreciate the care taken in selecting patients who can benefit by this service. Perhaps the remainder of this paper may help to further clarify some of the questions which we find patients have most frequently asked.

---

*All psychotherapists are under the supervision of the Child Psychiatrist, Dr Calvin Settlage.

[8] Due to limitation of space, the dynamics brought to the surface in psychotherapy, techniques used by the therapist, and changes in the patient's behavior cannot be presented in this paper.

*Chief Psychiatric Social Worker, Mental Hygiene Clinic, Delaware State Hospital.

"Do you think I'm crazy?" Many patients wonder this even if they do not express it. To anticipate this takes away much of the patient's fear. He has no doubt spoken of being nervous, upset, disturbed, anxious, unable to keep friends or hold a job. These phrases of the patient can be used to assist him in understanding how the clinic may help him with whatever is disturbing him and at the same time give him the reason for the referral on a basis he can accept rather than on a feeling he is crazy. The same applies to a parent distressed over his child's behavior—whether it is aggressive, withdrawn, indifferent, defiant, malicious or anti-social. Again, in order for the doctor to have recommended the clinic the parent has probably described his child's behavior and, if reminded of this in his own phrases, can accept the referral. Along with this is the parent's fear that he is a "bad" parent. Parents are not "bad" intentionally but often in trying very hard to be extra good parents they become so anxious, over-solicitous and over-protective that they do all the things that make their child exactly the opposite of the kind of person they can be proud of. For such people, being referred to the clinic is a terrific threat. They must be reassured that they are not alone in this but that it is a mistake made by many parents and with the counseling of the Clinic Staff for the parent and therapy for his child often these behavior manifestations work themselves out to a happy conclusion.

A frequent question is: "Do I *have* to go to the clinic?" The patient should understand that he does not have to come to the clinic. It is for his own benefit that he is being referred. Often just knowing that it is not compulsory helps the patient decide to take the step in coming to the clinic. Most people like to feel that what they do is their own decision, not one forced on them by others.

"Isn't the clinic at Delaware State Hospital?" This should be anticipated for if it is not presented at the time of referral the patient finds the shock greater when it comes from the clinic social worker, who, a stranger to him, is trying to arrange his appointment. A frank explanation that while the clinic building is on the State Hospital grounds and the Mental Hygiene Staff is under the direct supervision of the Superintendent of the State Hospital, the clinic has its own staff of psychiatrists, psychologists and social workers. Its building is separated from the rest of the hospital with a separate entrance gate. If continued anxiety is expressed about coming to the hospital, it is possible to schedule an appointment in one of the traveling clinics. These are located in Wilmington, Dover and Georgetown. School children in Wilmington can be seen through the clinic at the City Board of Education.

"Will they commit me to the State Hospital?" The clinic doctors do not commit patients to the hosiptal. They can recommend either commitment or voluntary admission to the hospital if this appears indicated. Actual carrying out of the commitment is then left to the referring physician. Voluntary admission is a decision the patient can make after he has been told of the psychiatrist's recommendation. Parents who fear we may remove their children from their homes can be reassured that the Clinic does not remove children from their homes. If the psychiatrist feels the child will benefit by a period in an institution, he will recommend this. Then after the referring physician has discussed this with the child's parents and if both feel that it is in the best interest of the child they can make application for institutionalization.

Next the patient wonders: "How are appointments made?" The referring physician sends a referral blank to the Superintendent for approval. This is then sent by him to the clinic, after which a social worker contacts a relative to secure a social history. The patient may feel that it is unnecessary to get a social history from someone else but we have found that by so doing we secure another approach to the patient's problem that further aids the psychiatrist in his own interview with the patient. Usually a parent, husband or wife is interviewed. The patient should be prepared for this as sometimes he has a preference regarding the best qualified person to supply accurate and adequate information for a background study. Here again is an opportunity for the referring physician to assist the clinic by sharing with us the name and address of the person from whom we can secure the history. The address and how to find it are especially important facts when the informant is located in the country. Time and expense are saved if directions are secured from the patient when the referral is sent in. After a history is obtained the clinic social worker arranges an appointment with the patient for the diagnostic examination which includes psychiatric and psychological tests. Two to three hours are aften required for this. If the patient is a potential danger to himself or the community but is not in need of immediate hospitalization it is important that this be indicated for otherwise, patients are studied in order of the acceptance of their referral. The time between receipt of the referral and the first contact with the family varies depending on the length of the waiting list. The period of waiting will be easier for the patient to accept if he knows about it.

"What will happen to me at the clinic?" The psychologist gives the patient several standard tests to aid in the evaluation of the patient's problem and his ability to use the help of the clinic. The psychiatrist interviews the patient and gives him a neurologic examination if this seems indicated. Children will be glad to know there will be no needles and they will not be hurt. In fact most children love the "games" they play with the psychologist.

In answering the next question: "What happens after the diagnostic interview?" I would like to add the question "Will I know what they think is the matter with my child?" These questions are vitally important and the answering of them is a place where the referring physician's role is most challenging. To assist in interpreting these recommendations to the patient, the clinic psychiatrist sends the referring physician the clinic findings and recommendations. The physician may then discuss these with the patient or the parents of the child referred and prepare him for acceptance of the recommendations if he is in accord with them.

The recommendations, for instance, may include psycho-therapy for an adult or play-therapy for a child, with counseling for his parent. This involves explaining to the patient that the psychiatrist feels he would be helped by continued interviews at the clinic probably on a weekly basis. For the child it means such interviews in the playroom with the psychiatrist while the parent is seeing the social worker for counseling. If the patient accepts this recommendation either the physician or the patient can call the social worker to arrange the program of therapy. Another possible recommendation might be medication which the psychiatrist would specify in the letter. Sometimes an electroencephalogram is recommended. If the patient accepts this latter recommendation it can be arranged through the Director of the Governor Bacon Health Center. A fourth recommendation might be for institutional care. Again this is an opportunity for the referring physician to discuss this with the patient and if the recommendation is accepted the doctor and the patient can make the application to the institution directly. Mental Hygiene Clinic will furnish the institution or Governor Bacon Health Center with a copy of our findings on receipt of a written request.

Should the patient want an opportunity to discuss the recommendations with the psychiatrist, an appointment can be made by contacting the social worker at the clinic. All appointments at the clinic are made in advance in order to insure for each patient the undivided attention and time he needs.

From the aforegoing article we hope you will know how very important and valuable we feel, you, the referring physicians, are to the clinic, and how much we need your understanding of our program in order for both you and the clinic to be of utmost service to your patient.

THE ROLE OF THE PSYCHIATRIC SOCIAL WORKER IN GROUP THERAPY

Hazel Browne Madry, A.A., M.A., M.S.W.,*
Delaware City, Del.

One of the functions of the psychiatric social worker at the Governor Bacon Health Center is that of leader in group therapy. Group therapy has been used comparatively little in institutions — though it is apparent that in these settings in which upset and emotionally disturbed youngsters live together constantly, the use of such a method by people who can handle it is essential.

The difference between individual and group therapy is on the emphasis. The goal is the same; — to bring about emotional maturity, understanding and insight. Group therapy is basically a special application of the principles of individual treatment to two or more persons simultaneously. In group therapy, the psychiatric social worker uses the same methods and concepts as in generic case work.

At the Governor Bacon Health Center, as in all child guidance clinics, there is a professional team composed of psychiatrist, psychiatric social worker and psychologist. In therapy, when change in the personality is the aim, adequate diagnosis must be the center of the process. The diagnostic process at the center requires a comprehensive understanding of the situation, the child, the people of his environment, his reactions which include earlier experiences. This information is obtained by the psychiatrist, and social worker at the time of the evaluation visit. Following the evaluation interviews with the child and parents the psychiatrist and psychiatric social worker in conference review the presenting problem and the psychiatrist arrives at a tentative diagnosis. This serves as a guide to the psychiatric social worker for cottage placement following admission and assignment of therapist by the psychiatrist. Thus even before admission there is the close liaison between the psychiatrist and psychiatric social worker which continues throughout therapy. The conferences often include the psychologist who contributes to the diagnosis and the therapeutic process.

Not all persons who come for help with problems in personal and social adjustment can or should be treated in a group. We adhere to the practice of placing individuals with the same syndrome rather than the same symptoms together. Group therapy is indicated when an individual is unable to gain from individual psychotherapy. Slavson reports that a large number of "children especially, as well as some adolescents and adults require relationship in a group as an integral part of treatment. Experience also indicates that many who are socially maladjusted and suffer from a variety of personality deviations are accessible only to group treatment." The group usually consists of six to eight children of the same sex. Adult groups may contain as many as fifteen. Flexibility is a prime consideration for success in group therapy.

Slavson points out that the "chief common value of the group is that it permits acting out of instinctual drives, which is accelerated by the catalytic effect of other group members. There is less caution and greater abandon in a group where the members find support in one another and the fear of self-revelation is strikingly reduced. As a result, patients reveal their problems more easily and therapy is speeded up. Defenses are diminished and the permissiveness of the total environment and the example set by others allows each to let go with a decrease of self-protective restraint. Although groups lessen the defenses of adults, this is particularly true of children and adolescents. Free acting out and talking through yields satisfaction. At the same time it brings patients face to face with their problems quite early in treatment. The defenses against injury to one's self-esteem are also reduced. The friendly group climate and the mutual acceptance do not require one to be on the defensive. All have the same or similar problems and no negative reactions are anticipated by any one. Status is assured. There is no fear of retaliation or debasement. But release and abreaction are not enough. Therapy must find means to re-integrate the personality, reshape attitudes and give the individual means for dealing with his life in new ways.

---

*Chief Psychiatric Social Worker, Governor Bacon Health Center.

The psychiatric social worker has certain qualities and attitudes essential to work with individuals or a group of persons who are emotionally disturbed. These include warmth, responsiveness, a permissiveness, and continued interest throughout the period of therapy. She knows the need of the individual for acceptance and respect no matter what he says or does. The psychiatric social worker refrains from coercion and is not judgmental. She is trained to understand and encourage the development of interpersonal relationships. The therapists encourages the patients to talk over their problems freely. She remains objective thereby permitting and encouraging full discussion of the feelings without guilt. In group therapy under her leadership children and mothers become aware that others have similar experiences and together learn how these problems which they felt were peculiarly their own may be solved. When individuals in the group express possible solutions to a problem which is agreed to by the group, the psychiatric social worker gives the encouragement necessary to make the change.

There is a reason for all behavior; and, it is the social worker's responsibility to learn why the members of her group do the things they do. She must be alert, observant, and able to listen attentively hearing with her third ear important feelings that are not expressed as well as those that are verbalized. She must have a quick perception of the emotional needs of the individuals. She must understand group relations and able to recognize the pattern of the group before her. No two groups are alike any more than two individuals.

The most important tool of the group therapist is her own personality. To be really helpful to others any one who works with people must learn to know herself, to recognize her own strengths and weaknesses. Intellectual knowledge cannot replace a disciplined learning about oneself in relation to one's work with human beings.

For successful group therapy the psychiatric social worker must know a great deal of psychology and psychiatry; and, be able to mobilize the forces which make self-help possible. She must also understand the dynamics of normality as well as of emotional disturbance. She must know the need of children and adults to release hostility or anxiety before any positive work can be done. She must understand the dynamics of group behavior; i.e. what a newcomer means in a group; what certain grouping means to the individual. She must be comfortable in a group and able to handle a group. This is not the same as handling a number of individuals. Ability to work successfully in individual therapy does not necessarily imply that the same worker will be effective in the group situation. Most group therapists have had a period of supervised field work. Only a person who has gone through this process of learning will be free to accept love, hate or resistance from the group members without becoming either conceited or discouraged or angry. The conscious use of her own personality is essential for the group therapist.

There are various types of group therapy, activity, didactic, interview or discussion, and relationship as well as manipulative which includes the personal as well as the physical environment. With one group there may be a combination of types. Activity group therapy is used most with emotionally disturbed and socially maladjusted children. Using this type the therapist allows the individual children to act out their impulses, desires, and wishes with more freedom than can be allowed in a classroom or home. As a group therapist in this situation the psychiatric social worker must have knowledge and ability to use a program as a tool. Activity is important but by itself will not help the child with serious emotional problems. While the therapist cannot help the individual child in the group without activities the program is only the means to be used to an end—to help the children with their interpersonal relationships. The effective therapists must have the ability to change quickly from one activity to another.

Adults and adolescents are able to profit by interview or discussion therapy. They discuss the subject of interest with as much freedom as their anxieties permit. Adjustment is made possible and accelerated by the group experience. The psychiatric social worker ob-serves, records mentally and from these two operations interprets to the group. The desire on the part of the group to do something about the troublesome and conflicting relations is often strong. The group is the milieu in which individuals with similar problems work them out on a social, educational, recreational or psychological level.

Relationship therapy as differentiated from other types of psychotherapy is characterized by the fact that the therapist focuses his interpretations upon each person's attitude towards the therapist and towards the other members of the group. It is based on the principle that the patient brings into the relationship with the therapist both positive and negative emotions and patterns that he uses in his everyday life. The therapist serves a buffer thus the therapeutic relationship becomes a living experience in which the "individual is able to release the whole gamut of feelings towards the therapist." The psychiatric social worker remains passive to the content but at the same time is active in pointing out the immediate underlying emotional drives. These immediate emotions are the feelings of which the individual is nearly aware and which he can face without too much anxiety. The general purpose is to help the patient come to terms with himself. Not all persons need the same depths of therapy and the therapist must have judgment and experience so as to sense how much insight is needed by each patient. Improvement is noted when individuals begin to make adjustments in living arrangements, employment, education, hobbies and take on new interests. This may be a case of moving the square peg to the square hole.

All kinds of therapy have the same purpose which is release from intense emotional distress, a way of making more effective and more satisfying relationships with people. The requisite lies in the ability of the individual to achieve a relationship with the therapist and through her to all members of the group. The process involves leadership on the part of the psychiatric social worker which makes it possible for the group to effect acceptable changes rather than hold to ineffective ways of dealing with people. The group is the milieu in which individuals with similar problems work them out on a social, education, recreational or psychological level.

"The need of human beings for each other both emotionally and realistically lends itself to the formation of groups." It is natural for people to function in groups;—the family, the social group, class, a union or committee. Conflicting tendencies can become so intense as to make group effort completely ineffectual. Each of you in your experience has been confronted by antagonism on the part of members of the group which vitiated the opportunities for group effort; and the hostility has sometimes caused the total dissolution of the group. There are probably no distinctly different qualitative dynamic processes occurring in group therapy than in normal groups. I believe that at the Governor Bacon Health Center we are able to demonstrate through group therapy that the principles may be applied to other fields particularly education. We have learned and are learning a great deal about dynamics involved in the relationship between the group and the therapist. The more healthy the emotional status of the group the more likely the mutually satisfactory goals can be achieved. The application of these principles to collective effort should greatly increase the effectiveness and improve our opportunities in all endeavor in the future.

REFERENCE

The Practice of Group Therapy, edited by S. R. Slavson; Therapeutic Work with Children, by Gizelle Konopka; Emotional Maturity, by Leon Sauls.

Tuberculosis is second in importance among public health problems in Turkey, malaria having almost come under control. Long years of malaria control work, the application of DDT and administration of quinacrine plus health propaganda have considerably lessened the incidence of malaria, and deaths from malaria are now few. The tuberculosis death rate is 150 to 200 per hundred thousand. The rise in the cost of living, high prices for food and rent and an insufficient number of hospital beds for the tuberculous, resulting in long waiting lists, have greatly increased the spread of the disease among the lower income groups during the war years. Edit., J.A.M.A., May 5, 1951.

LIBRARY OF THE

MEDICAL SOCIETY OF DELAWARE
Hotel DuPont
WILMINGTON, DELAWARE
MONDAY, OCT. 8, 1951

7:00 p.m.—Meeting of the Council
8:30 p.m.—Meeting of the House of Delegates

TUESDAY, OCT. 9, 1951

Scientific Sessions—Hotel DuPont

9:30 a.m.—Invocation: Rev. William F. Dunkle, D. D.
9:40 a.m.—Address of Welcome: Hon. James F. Hearn.
10:00 a.m.—Report of House of Delegates: A M. Gehret, Wilmington
10:10 a.m.—(Color Movie): New Kidney Approach: Brice S. Vallett, Wilmington
10:20 a.m.—Diagnosis and Treatment of Epilepsy: Douglas T. Davidson, Jr., Boston.
11:00 a.m.—Exhibits
11:30 a.m.—Cranio-cerebral Injuries: Richard G. Coblentz, Baltimore.

12:30 p.m.—Luncheon: Members and Guests Medical Society of Delaware

---

2:00 p.m.—Certain Aspects of Surgery of the Newborn: C. Everett Koop, Philadelphia.
2:40 p.m.—Treatment of Nephrosis: Lee E. Farr, Upton, Long Island
3:20 p.m.—Exhibits
3:50 p.m.—Treatment of Peripheral Arterial Disease: Hugh Montgomery, Philadelphia.
4:30 p.m.—Office Management of Diabetes Mellitus: Perry S. MacNeal, Philadelphia.
2-5 p.m.—State Board of Health Mobile Unit: Chest X-rays of Physicians and Their Families.

6:45 p.m.—Reception and Dinner (Subscription)
9:00 p.m.—Address: John W. Cline, San Francisco, President of the A.M.A.

WEDNESDAY, OCT. 10, 1951

9:00 a.m.—Chemicals and Health: John H. Foulger, Wilmington.
9:40 a.m.—Industry's Challenge to Medicine: R. Ralph Bresler, Philadelphia.
10:20 a.m.—Care of the Woman in the Postmenopausal Era: Franklin L. Payne, Philadelphia.
11:00 a.m.—Exhibits
11:30 a.m.—Impressions After 33 Years in Medical Practice: Charles E. Wagner, Wilmington.
12:10 p.m.—Election of President-elect (New Castle County).

12:30 p.m.—Luncheon: New Castle County Medical Society. Members, Guests and Auxiliary.

2:00 p.m.—Role of the General Practitioner in Counselling Before and After Marriage: O. Spurgeon English, Philadelphia.
2:40 p.m.—Potential Dangers from the Incomplete Examination of the Pregnant Woman: J. Robert Willson, Philadelphia.
3:20 p.m.—Exhibits
3:50 p.m.—Retrolental Fibroplasia: P. Robb McDonald, Philadelphia.
4:30 p.m.—Management of Intractable Achalasia: H. Clinton Davis, Philadelphia.

WOMAN'S AUXILIARY, M. S. of D.
Delaware Academy of Medicine
TUESDAY, OCT. 9, 1951

10:00 a.m.—Registration
10:30 a.m.—Business Session
12:30 p.m.—Luncheon: duPont Country Club
Address: E. Gilbert Ketchum, Philadelphia, Supervisor, Reeducation Clinic, Pennsylvania Hospital.
6:45 p.m.—Reception and Dinner (Subscription) Hotel duPont.
Address: John W. Cline
San Francisco
President of the A.M.A.

WEDNESDAY, OCT. 10, 1951

10:30 a.m.—Business Session
Inaugural Address: Mrs. S. W. Rennie
12:30 p.m.—Luncheon: New Castle County Medical Society, Hotel duPont.

Editorials

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building
Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place
M. A. Tarumianz, M. D. ....Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 23 August, 1951 No. 8

GERIATRICS

Everything that lives must grow old. With the process of aging comes the various needs of the aged. The disabilities and diseases of the aged as well as the conservation of their health should be the interest of everyone.

The average life span in the United States in 1900 was 48 years, today it is 67 years. Forecasts estimate 75 years as an average life expectancy in 1960 in the United States. The number past 65 years of age gained 35% from 1930 to 1940 while the population of this country gained only 7.2%. The number in this particular age group in this country is about 14 million. Gradually we are becoming a nation of older people. The adequate scientific study of this period of life has been neglected. Only recently the medical schools have turned their attention to specialized study of the aged. Geriatrics deals with the health and illnesses of the aged. Gerontology is the study of the aging processes. The geriatrician will fill an important place in our community life. His task demands highly specialized training, including social and economic aspects of life. We should look at old age as one period of continuous life process. The highly specialized scientific studies that have been given to other periods of life are badly needed here.

We in Delaware have about 27,000 men and women who have passed the age of 65 years. Are we doing any research work in this field? We certainly have many wealthy citizens who have passed this age and who should be interested in establishing a foundation for the study of this problem. Our physicians should encourage their elderly patients to become interested in such a foundation.

Chronological age is not the chief determiner of usefulness. "Man is actually as old as the total functioning capacity of his vital organs."* Age must be determined biologically. Many authorities believe that mental maturity is not reached until the age of 30 and increases slowly until the age of 70. A normal person is at his best mental period between 40 and 70. Men and women of this age group should contribute to the science of gerontology thus enabling society to create a new era for the chronological aged, an era when men and women will continue their wholesome activities until the zero hour of their biological end.

---

*Benjamin, Harry: "Biologic Versus Chronologic Age."

MISCELLANEOUS

Doctors Incomes, 1949

Physicians in private practice in this country in 1949 had average net income before taxes of $11,058, and those in big cities didn't make as much as those in medium size communities.

These findings were reported recently on the basis of a mail survey of 55,000 physicians, by the Department of Commerce and the American Medical Association. The association, which conducted the study jointly with the department, called the study the best ever made of income in the profession.

The $11,058 for the entire profession included salaried and independent physicians, but not internes, resident physicians and teachers.

Other findings: Neurologists had the highest net average income, $28,628; 13 per cent of those in private practice had net incomes under $3,000 and eight per cent earned more than $25,000 net before taxes.

Key groups:

Neurological surgeons	$28,628
Pathologists	22,284
Gynecologists	19,283
Members of partnerships	17,722
Full specialists	15,014
Doctors paid by fee	11,858
Part specialists	11,758
General practitioners	8,835
Doctors on salary	8,272

Doctors do best in medium-sized cities (about 350,000), worst in villages under 2,500 and cities of 1,000,000 or more. Lowest-paid big-city doctors in the U. S.: New York's.

American Board of ObG.

Effective August 10th, 1951, the office of the American Board of Obstetrics and Gynecology will be located in Cleveland, Ohio. Please address all communications to:

Robert L. Faulkner, M. D.
Secretary-Treasurer
American Board of Ob. & Gyn.
2105 Adelbert Road
Cleveland 6, Ohio

New Tumor Code

The first major attempt to clarify and standardize the complicated terminology of cancer has been made by the American Cancer Society.

Publication of a new book, "Manual of Tumor Nomenclature and Coding," was announced recently by the Society. The book will be distributed to cancer clinics and registries, hospitals, health departments, medical schools, research centers, and to individual pathologists, surgeons, and statisticians.

Widespread use of the new tumor code is expected since it will be used in conjunction with the American Medical Association's "Standard Nomenclature of Diseases" and the World Health Organization's "International Statistical Classification of Diseases, Injuries and Causes of Death."

Employment of the code will result in more comprehensive statistical records since it classifies both benign and malignant tumors according to histologic origin. Heretofore most cancer death and incidence records have indicated only the body site of tumors. The final aim of statistical studies is to reflect organized knowledge back to the clinician for the patient's benefit.

Dr. M. C. Winternitz, chairman of the National Research Council's Division of Medical Sciences, called the new manual "a real contribution to the accurate analysis and exchange of cancer data."

"The study of tumors is an exacting and complex discipline," he said. "Its pursuit is difficult enough without the handicap of barriers to communication in the form of conflicting terminologies and statistical coding systems. Pathologists and statisticians now have pooled their efforts to overcome these barriers, and to provide a common language for themselves and for record librarians, practitioners, students, teachers, and research workers."

Work on the manual has been in progress since 1948 under the direction of an American Cancer Society statistics committee.

OBITUARY

Gerald L. Dougherty, M. D.

Dr. Gerald L. Dougherty, a practicing physician in Wilmington for 43 years, died in the St. Francis Hospital where he was staff chief of medicine, on August 9, 1951, of heart disease, at the age of 68.

A native of Wilmington, Dr. Dougherty was born Sept. 23, 1882, a son of Mr. and Mrs. Dennis Dougherty. He attended the Wilmington public schools, the Wilmington High School, Georgetown Medical College, and in 1908 graduated at the University of Maryland School of Medicine. He served his interneship at St. Agnes Hospital, Philadelphia.

As a student in the Wilmington High School, Dr. Dougherty was a member of the school's track team and winner of a silver cup, awarded members of the winning relay team at the Penn Relays in 1901.

Dr. Dougherty was commissioned in the Army Medical Corps in World War I and previous to this service, was among the physicians who served when an influenza epidemic swept Nashville, Tenn.

A widower, the doctor had been married to the former Essaline Collins. He is survived by two sons, Gerald L. Dougherty, Jr., former University of Delaware track man, and Francis Dougherty; two daughters, Mrs. J. F. Montgomery and Mrs. Walter L. Brady; a sister, Miss Mary Dougherty, and seven grandchildren. All are Wilmington residents.

Funeral services were held at St. Ann's R. C. Church on August 14, 1951, with interment in St. Joseph's-on-the-Brandywine Cemetery.

BOOK REVIEWS

Principles of General Psychopathology. An Interpretation of the Theoretical Foundations of Psychopathological Concepts. By Siegfried Fischer, M. D., Clinical Instructor in Psychiatry, University of California, formerly Professor of Psychiatry and Neurology, University of Breslau. Pp. 327. Cloth. Price, $4.75. New York: Philosophical Library, 1950.

This book is an excellent survey of the important psychopathological phenomena. The author wisely divided this book into four parts: one dealing with the fundamentals of psychopathology; the second part deals with the psychological connections; the third with the syndromes of mental disturbances; and part four describes normal, neurotic and psychopathic personalities and the relation between personality and psychosis. The author is very careful in his interpretation of various reactions and phenomena. We sincerely recommend this book to students, psychologists, social workers and young psychiatrists. This book should be among the test books in every library.

Freud: Dictionary of Psychoanalysis. Edited by Nandor Fodor and Frank Gaynor with a Preface by Theodor Reik. Pp. 208. Cloth. Price, $3.75. New York: Philosophical Library, 1950.

This is a book that should be in every medical and public library. The editors of this Dictionary have recognized the long felt need of such; however, one should not misconstrue the purpose of this book. Such a dictionary cannot be used as a text book of psychoanalysis. The editors of this book have endeavored to eliminate the misconceptions and misrepresentations to which psychoanalysis has been subjected. We wish to congratulate the editors for this excellent dictionary and highly recommend it to all libraries.

Sexual Fear. By Edwin W. Hirsch, M. D. Attending Urologist, Englewood Hospital, Chicago. Pp. 307. Cloth. Price, $3.00. Garden City, Garden City Publishing Company, 1950.

In this book the author presents some practical and helpful measures for understanding physiological and psychological sexual fears. This is an interesting and practical book for men and women.

Master Your Mind. By Samuel Kahn, M. D. Department of Psychology and Psychiatry, Long Island University. Second Edition. Pp. 262. Cloth. Price, ... New York: Rockport Press, 1951.

This is a very useful book for students, teachers, parents and other young intelligent people, who are interested in acquiring mental efficiency. The author gives authoratative suggestions, quotes many well known and famous authors. Various chapters on memorizing, psychology on thinking and reasoning, failure and success, are well written. We recommend this book very highly, particularly for school libraries.

Psychology—Principles and Applications. By Marian East Madigan, Ph. D., Visiting Professor, Summer Sessions, University of Arizona. Pp. 403. Cloth. Price, $4.25. St. Louis: C. V. Mosby Company, 1950.

This is a very valuable text book for students. The author gives the student a short introduction to the study of psychology, describing very clearly the biological and social forces affecting human behavior. The text is divided into four units as follows: The Nature and Methods of Psychology; The Essentials of Learning; The Biological and Social Basis of Behavior and Adjustment. We wish to congratulate the author for a fine book.

Professional Adjustments. By Sister Mary Isidore Lennon, R. S. M., R. N., M. S., Director of Social Service Department, St. John's Hospital, St. Louis. Second Edition. Pp. 362. Cloth. Price, $3.50. St. Louis: C. V. Mosby Company, 1950.

The author writes this book primarily for schools in Catholic hospitals and therefore emphasizes the Catholic viewpoints. But the suggestions she offers are of universal value. The various chapters describing the needs for professional adjustments, for discipline, for religious life, for proper conduct, etc., will prepare student nurses for a more mature social life. This book should be a necessary acquisition to any school of nursing library.

Management of Obstetric Difficulties. By Paul Titus, M. D., Obstetrician and Gynecologist, St. Margaret Memorial Hospital, Pittsburg. Fourth Edition. Pp. 1046 with 446 illustrations and 9 color plates. Cloth. Price, $14.00. St. Louis: C. V. Mosby Company, 1950.

A new and probably last edition of this excellent text on obstetrics. Dr. Titus recently passed away, all too early; his goal undoubtedly being perfection—the reduction of maternal mortality to zero. The contents are well organized, and while there might be some leaning toward excess verbiage, every chapter and sub-heading is well covered.

Dr. Titus, having been the Secretary of the American Board of Obstetrics and Gynecology—thus giving his opinion additional weight—finally took the stand that some aspects of external caliper pelvimetry were obsolete. This, despite the fact that hospital examiners and inspectors felt that no obstetrical chart would be complete unless the time worn external measurements were thereon inscribed.

This reviewer agrees with Dr. Titus that excess "ironing" of the perineum at time of delivery is to be condemned. He feels, and rightly so, that this frequently causes submucous laceration and separation of the muscles which can not be detected at the time.

The following statement, on page 682, might be greeted with a raised eyebrow: "A truly 'difficult forceps delivery' is a rare event, and usually results from some error in judgment having been committed by the obstetrician . . . . . ." However, after pause and honest consideration, we believe this to be only too true.

This book is an expression of the knowledge and experiences gained throughout the years by an able clinician, together with the accepted advances of other workers in the field. It is a valuable addition to the working library of any physician interested in obstetrics.

. . . CONTENTS . . .

PREVENTIVE PSYCHIATRY IN DELAWARE, *M. A. Tarumianz, M. D.*, Farnhurst, Del. 193

DIAGNOSIS AND TREATMENT OF ANXIETY STATES, *Joseph Hughes, M. D.*, Philadelphia, Pa. 197

NEUROPSYCHIATRIC EMERGENCIES, *Joseph C. Yaskin, M. D.*, Philadelphia Pa. . . 202

PITUITARY CRETINISM, *Charles William Dunn, M. D.*, Philadelphia, Pa. 207

EPILEPSY AND CONVULSIVE DISORDERS AS SEEN IN THE SEIZURE UNIT OF THE GOVERNOR BACON HEALTH CENTER, *Joseph Hughes, M. D., Roy Read, M. D., Hazel Madry, M. S. W., and Irene Nowland, R. N.*, Farnhurst, Del. 211

PSYCHOTHERAPY CONFERENCES AT GOVERNOR BACON HEALTH CENTER, *Earl A. Loomis, Jr., M. D.*, Philadelphia, Pa. 212

STUDY OF A SCHIZOPHRENIC FAMILY, *F. A. Freyhan, M. D.*, Farnhurst, Del. 213

SURGICAL INTERVENTION IN COMBINED PHYSICAL STERILITY AND PSYCHIC IMPOTENCE, A Case Report, *Harry S. Howard, M. D.*, Farnhurst, Del. 217

AUTO-FELLATIO, A Case Report, *Jerome Kay, M. D.*, Delware City, Del. 218

MAINTAINING BALANCE, *A. W. Gottschall, M. D.*, Farnhurst, Del. 222

MENTAL HYGIENE AND A CONTINUOUS STATE OF COLD WAR, *Louis J. Kowalski, M. D.*, Farnhurst, Del. 224

CONTRAINDICATIONS FOR ELECTRIC SHOCK TREATMENT, The Need For Re-evaluation, *H. George De Cherney, M. D.*, Farnhurst, Del. 226

A CASE OF EPILEPSY, *Roy E. Reed, M. D.*, Delaware City, Del. 227

THE NEED FOR MENTAL HYGIENE, A Case Report, *Calvin Settlage, M. D.*, Delaware City, Del. 228

SODIUM AMYTAL ADDICTION WITH AN ACUTE TOXIC PSYCHOSIS, *Julius Fechner, M. D.*, Farnhurst, Del. 231

SYPHILIS IN NEGRO PATIENTS, *C. Lawrence R. Souder, M. D.*, Farnhurst, Del. . . 232

ALCOHOLISM, *William A. Byrne, M. D.*, Wilmington, Del. 233

AN ADOLESCENT BEHAVIOR PROBLEM IN A GIRL, *O. Eugene Baum, M. D.*, Farnhurst, Del. 235

A NOTE ON THE PROBLEM CHILD, *William S. Robbins, M. D.*, Farnhurst, Del. . . 239

TWO CASES OF JUVENILE SCHIZOPHRENIA, *Tatjana Thaller Canki, M. D.*, Farnhurst, Del. 240

THE NECESSITY OF INDIVIDUALIZATION IN INSULIN-COMA THERAPY, *N. T. Arikian, M. D.*, Farnhurst, Del. 243

AN IDIOT-SAVANT? *Joseph Jastak, Ph.D.*, Farnhurst, Del. 244

PSYCHOLOGICAL STUDY OF CHILDHOOD SCHIZOPHRENIA, A Case Report, *W. H. Tracy*, Delaware City, Del. 246

A CHALLENGE TO YOU, THE REFERRING DOCTOR, *Marjorie Hubbard, A.B., M.S.S.*, Farnhurst, Del. 248

THE ROLE OF THE PSYCHIATRIC SOCIAL WORKER IN GROUP THERAPY, *Hazel Browne Madry, A.A., M.A., M.S.W.*, Delaware City, Del. 251

1789—MEDICAL SOCIETY OF DELAWARE—1951

OFFICERS

President, Charles E. Wagner, Wilmington
President-Elect, Ervin L. Stambaugh, Lewes
Secretary, Andrew M. Gehret, Wilmington
Vice-President, Benjamin F. Burton, Dover
Treasurer, Joseph M. Messick, Wilmington
Executive Secretary, W. Edwin Bird, M. D., 822 N. American Bldg., Wilmington

American Medical Association (1951) Delegate: James Beebe, Lewes Alternate: C. E. Wagner, Wilmington
Representative to Delaware Academy of Medicine, W O. LaMotte, Wilmington

STANDING COMMITTEES

Scientific Work

R. W. Comegys, Clayton
O. A. James, Milford
A. M. Gehret, Wilmington

Medical Education

R. O. Y. Warren, Wilmington
J. L. Fox, Seaford
H. W. Smith, Harrington

Publication

W. E. Bird, Wilmington
M. A. Tarumianz, Farnhurst
A. M. Gehret, Wilmington

Public Laws

J. S. McDaniel, Dover
J. W. Lynch, Seaford
E. R. Mayerberg, Wilmington
J. D. Niles, Middletown
V. D. Washburn, Wilmington

Budget

J. M. Messick, Wilmington
Charles Levy, Wilmington
M. A. Tarumianz, Farnhurst
W. T. Chipman, Harrington
J. R. Elliott, Laurel

SPECIAL COMMITTEES

Advisory, Woman's Auxiliary

Roger Murray, Wilmington
Charles Levy, Wilmington
J. M. Messick, Wilmington
J. J. Lazzeri, Smyrna
J. R. Elliott, Laurel

Cancer

D. M. Gay, Wilmington
J. V. Casella, Wilmington
J. F. Hynes, Wilmington
E. G. Laird, Wilmington
W. W. Lattomus, Wilmington
C. J. Prickett, Smyrna
R. R. Layton, Dover
James Beebe, Lewes
Bruce Barnes, Seaford

Tuberculosis

L. D. Phillips, Marshallton
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
J. S. McDaniel, Jr., Milford
L. C. McGee, Wilmington
J. M. Messick, Wilmington
C. J. Prickett, Smyrna
William Marshall, Jr., Milford
C. M. Moyer, Laurel

SPECIAL COMMITTEES

Maternal and Infant Mortality

A. H. Williams, Laurel
C. T. Lawrence, Jr., Wilmington
C. L. Hudiburg, Wilmington
S. W. Rennie, Wilmington
R. O. Y. Warren, Wilmington
B. F. Burton, Dover

Mental Health

G. W. K. Forrest, Wilmington
J. S. McDaniel, Jr., Dover
O. V. James, Milford

Industrial Health

L. C. McGee, Wilmington
G. H. Gehrmann, Wilmington
H. L. Springer, Wilmington
E. H. Mercer, Dover
H. V'P Wilson, Dover
D. L. Bice, Seaford
A. C. Smoot, Georgetown

Vocational Rehabilitation

James Beebe, Lewes
G. A. Beatty, Wilmington
I. M. Flinn, Wilmington
T. B. Strange, Wilmington
W. C. Pritchard, Smyrna

Heart Disease

E. R. Miller, Wilmington
A. H. Clagett, Jr., Wilmington
E. M. Krieger, Wilmington
F. R. Everett, Dover
R. L. Klingel, Lewes

Diabetes

L. B. Flinn, Wilmington
J. R. Durham, Jr., Wilmington
Charles Levy, Wilmington.
L. L. Fitchett, Milford

Arthritis

A. J. Heather, Wilmington
I. M. Flinn, Wilmington
A. R. Shands, Wilmington
C. C. Fooks, Milford
O. A. James, Milford

Health & Sanitation

E. R. Mayerberg, Wilmington
G. A. Beatty, Wilmington
V. D. Washburn, Wilmington
W. T. Chipman, Harrington
H. V'P. Wilson, Dover
Bruce Barnes, Seaford
E. L. Stambaugh, Lewes

Fees for Welfare Patients

R. W. Comegys, Clayton
A. R. Crutchley, Middletown
J. W. Lynch, Seaford

SPECIAL COMMITTEES

Medical Service and Public Relations

E. R. Mayerberg, Wilmington
B. M. Allen, Wilmington
W. O. LaMotte, Wilmington
C. L. Munson, Wilmington
W. M. Pierson, Wilmington
J. S McDaniel, Dover
H. V. P. Wilson, Dover
J. W. Lynch, Seaford
O. A. James, Milford

Rural Medical Service

J. R. Downes, Newark
C. R. Donoho, Newark
J. D. Niles, Middletown
C. J. Prickett, Smyrna
H. W. Smith, Harrington
Bruce Barnes, Seaford
H. S. Riggin, Seaford

Care of Colored People

H. T. McGuire, New Castle
Conwell Banton, Wilmington
S. G. Elbert, Jr., Wilmington
I. J. MacCollum, Wyoming
J. L. Fox, Seaford

National Emergency Medical Service

J. R. Beck, Wilmington
C. L. Munson, Wilmington
W. F. Preston, Wilmington
S. H. Stradley, Wilmington
V. D. Washburn, Wilmington

Medical Economics

Ira Burns, Wilmington
J. S. McDaniel, Jr., Dover
J. E. Marvil, Laurel

Hospitals and Practice of Medicine

J. W. Howard, Wilmington
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
W. O. LaMotte, Wilmington
C. E. Wagner, Wilmington
J. S. McDaniel, Dover
J. B. Waples, Georgetown

Social Hygiene

A. D. King Wilmington
E. H. Mercer, Dover
James Beebe, Jr., Lewes

Grievance Board

G. W. K. Forrest, Wilmington
I. L. Chipman, Wilmington
J. D. Niles, Middletown
I. J. MacCollum, Wyoming
James Beebe, Lewes

WOMAN'S AUXILIARY

Mrs. Douglas M. Gay, *President*, Wilmington
Mrs. S. W. Rennie, *President-elect*, Wilmington
Mrs. E. T. O'Donnell, *Corresponding Secretary*, Wilmington
Mrs. Andrew M. Gehret, *Recording Secretary*, Wilmington
Mrs. Lawrence W. Fitchett, *Treasurer*, *Milford*

NEW CASTLE COUNTY MEDICAL SOCIETY

Meets Third Tuesday

V. D. Washburn, *President*
W. W. Lattomus, *President-elect*
S. H Stradley, Jr., *Vice-President*
H. H. Stroud, *Secretary*
C. M Bancroft, *Treasurer*
E. C. Syrovatka, *Executive Secretary*

Councilors (1952): L. C. McGee, H. T. McGuire, J. C. Pierson.

Delegates (1951): E. M. Bohan, Ira Burns, Junius A. Giles, A. D. King, E. G. Laird, W. O. LaMotte, Sr., Charles Maroney, E. M. Mayerberg, W. M. Pierson, Edward Parvis, O. N. Stern, H. H. Stroud, M. A Tarumianz.

Alternates (1951): Steven Bartoshesky, Joseph Beck, Allen Fleming, Mildred Forman, David J. King, A. G Lessey, Wm. T. McLane, Douglas Sanders, Paul Shaw, Roger B. Thomas, R. O. Y. Warren.

Delegates (1951-52): N. L. Cannon, I. L. Chipman, Sr., J. A. Giles, A. L. Heck, Charles Levy, C. L. Munson, M. B. Pennington, J. C. Pierson, S. H. Stradley, Jr., G. W. Vaughn, V. D. Washburn.

Alternates (1951-52): L. V. Anderson, R. E. Allen, J. W. Barnhart, J M Barsky, Jr., W. W. Briggs, Italo Charamella, J. A. Chrzanowski, C. T. Lawrence, F. A. Jones, C. P. Johnson, T. E. Resnick, F. S. Skura, H. A. Tarrant.

MEDICAL COUNCIL OF DELAWARE

Hon. Charles S. Richards, *President;* Joseph S. McDaniel, M. D., *Secretary;* Wallace M. Johnson.

KENT COUNTY MEDICAL SOCIETY

Meets First Wednesday

R. R. Layton, Jr., *President*, Dover
J. B. Baker, *Vice-President*, Milford
J. S. McDaniel, Jr., *Secretary-Treasurer*, Dover

Councilors: C. J. Prickett, Smyrna and Wm. Marshall, Milford.

Delegates: H. V. P. Wilson, Dover, and I. J. MacCollum, Wyoming.

Alternates: J. S. McDaniel, Dover, and H. W. Smith, Harrington.

DELAWARE STATE DENTAL SOCIETY

J. S. Mack, *President*, Seaford
J. F. Maguire. *1st V. P.*, Wilmington
H. L. Kurfirst, *2nd V. P.*, Wilmington
James Krygier, *Secretary*, Wilmington
Louis Kreshtool, *Treasurer*, Wilmington
P. E. Musselman, *Delegate A.D.A.*, Newark.
Clyde Nelson, *Alternate A D.A.*, Milford.

DELAWARE STATE BOARD OF HEALTH

J. D. Niles, M. D., *President*, Middletown; I. J. MacCollum, *Vice-President*, Wyoming; C. E. Moore, D. D. S., *Secretary*, Seaford; C. M Moyer, M D., Laurel; Mrs. Edith R. Kendall, Wilmington; Mrs. A Louise Cochran, Middletown, R1. Howard N. Stayton, M. D., Wilmington; Mrs. N. W. Voss, Wilmington. Floyd I. Hudson, M. D., *Executive Secretary*, Dover.

BOARD OF MEDICAL EXAMINERS

J. S. McDaniel, *President-Secretary;* H. V. P. Wilson, *Assistant Secretary;* W E Bird, J E Marvil, G. A. Beatty.

SUSSEX COUNTY MEDICAL SOCIETY

Meets Second Thursday

O. A. James, *President*, Milford
J. L. Fox, *Vice-President*, Seaford
T. J. Tobin, *Secretary-Treasurer*, Milton

Councilors: J. W. Lynch, Seaford; A. C. Smoot, Georgetown.

Delegates: Bruce Barnes, Seaford; D. L. Bice, Seaford; C. M. Moyer, Laurel; G. M. Van Valkenburgh, Georgetown.

Alternates: W. G. Hume, Selbyville; R. L. Klingel, Rehoboth; A. C. Smoot, Georgetown; E. L. Stambaugh, Lewes.

DELAWARE ACADEMY OF MEDICINE

Open 10 A.M. to 5 P.M.

B. M. Allen, M.D., *President.*
W. M. Pierson, M.D. *First Vice-President.*
R. R. Wier, D.D.S., *Second Vice-President.*
A. M. Gehret, M.D., *Secretary.*
I. M. Flinn, M.D., *Treasurer.*
E. C. Syrovatka, J. D., *Librarian.*

DELAWARE PHARMACEUTICAL SOCIETY

J. Wallace Watson, *President*, Wilmington
Landis Wilson, *First Vice-President*, Georgetown.
Norman Chamberlain, *Second Vice-President*, Harrington.
Grover Ashton, *Third Vice-President*, Milford.
Harry C. Zeisig, *Secretary*, Milford.
Albert Dougherty, *Treasurer*, Wilmington.

1789—MEDICAL SOCIETY OF DELAWARE—1951

OFFICERS

President, Charles E. Wagner, Wilmington
President-Elect, Ervin L. Stambaugh, Lewes
Secretary, Andrew M. Gehret, Wilmington
Vice-President, Benjamin F. Burton, Dover
Treasurer, Joseph M. Messick, Wilmington
Executive Secretary, W. Edwin Bird, M. D., 822 N. American Bldg., Wilmington
American Medical Association (1951) Delegate: James Beebe, Lewes
Alternate: C. E. Wagner, Wilmington
Representative to Delaware Academy of Medicine. W O. LaMotte, Wilmington

STANDING COMMITTEES

Scientific Work

R. W. Comegys, Clayton
O. A. James, Milford
A. M. Gehret, Wilmington

Medical Education

R. O. Y. Warren, Wilmington
J. L. Fox, Seaford
H. W. Smith, Harrington

Publication

W. E. Bird, Wilmington
M. A. Tarumianz, Farnhurst
A. M. Gehret, Wilmington

Public Laws

J. S. McDaniel, Dover
J. W. Lynch, Seaford
E. R. Mayerberg, Wilmington
J. D. Niles, Middletown
V. D. Washburn, Wilmington

Budget

J. M. Messick, Wilmington
Charles Levy, Wilmington
M. A. Tarumianz, Farnhurst
W. T. Chipman, Harrington
J. R. Elliott, Laurel

SPECIAL COMMITTEES

Advisory, Woman's Auxiliary

Roger Murray, Wilmington
Charles Levy, Wilmington
J. M. Messick, Wilmington
J. J. Lazzeri, Smyrna
J. R. Elliott, Laurel

Cancer

D. M. Gay, Wilmington
J. V. Casella, Wilmington
J. F. Hynes, Wilmington
E. G. Laird, Wilmington
W. W. Lattomus, Wilmington
C. J. Prickett, Smyrna
R. R. Layton, Dover
James Beebe, Lewes
Bruce Barnes, Seaford

Tuberculosis

L. D. Phillips, Marshallton
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
J. S. McDaniel, Jr., Milford
L. C. McGee, Wilmington
J. M. Messick, Wilmington
C. J. Prickett, Smyrna
William Marshall, Jr., Milford
C. M. Moyer, Laurel

SPECIAL COMMITTEES

Maternal and Infant Mortality

A. H. Williams, Laurel
C. T. Lawrence, Jr., Wilmington
C. L. Hudiburg, Wilmington
S. W. Rennie, Wilmington
R. O. Y. Warren, Wilmington
B. F. Burton, Dover

Mental Health

G. W. K. Forrest, Wilmington
J. S. McDaniel, Jr., Dover
O. V. James, Milford

Industrial Health

L. C. McGee, Wilmington
G. H. Gehrmann, Wilmington
H. L. Springer, Wilmington
E. H. Mercer, Dover
H. V'P Wilson, Dover
D. L. Bice, Seaford
A. C. Smoot, Georgetown

Vocational Rehabilitation

James Beebe, Lewes
G. A. Beatty, Wilmington
I. M. Flinn, Wilmington
T. B. Strange, Wilmington
W. C. Pritchard, Smyrna

Heart Disease

E. R. Miller, Wilmington
A. H. Clagett, Jr., Wilmington
E. M. Krieger, Wilmington
F. R. Everett, Dover
R. L. Klingel, Lewes

Diabetes

L. B. Flinn, Wilmington
J. R. Durham, Jr., Wilmington
Charles Levy, Wilmington.
L. L. Fitchett, Milford

Arthritis

A. J. Heather, Wilmington
I. M. Flinn, Wilmington
A. R. Shands, Wilmington
C. C. Fooks, Milford
O. A. James, Milford

Health & Sanitation

E. R. Mayerberg, Wilmington
G. A. Beatty, Wilmington
V. D. Washburn, Wilmington
W. T. Chipman, Harrington
H. V'P. Wilson, Dover
Bruce Barnes, Seaford
E. L. Stambaugh, Lewes

Fees for Welfare Patients

R. W. Comegys, Clayton
A. R. Crutchley, Middletown
J. W. Lynch, Seaford

SPECIAL COMMITTEES

Medical Service and Public Relations

E. R. Mayerberg, Wilmington
B. M. Allen, Wilmington
W. O. LaMotte, Wilmington
C. L. Munson, Wilmington
W. M. Pierson, Wilmington
J. S. McDaniel, Dover
H. V. P. Wilson, Dover
J. W. Lynch, Seaford
O. A. James, Milford

Rural Medical Service

J. R. Downes, Newark
C. R. Donoho, Newark
J. D. Niles, Middletown
C. J. Prickett, Smyrna
H. W. Smith, Harrington
Bruce Barnes, Seaford
H. S. Riggin, Seaford

Care of Colored People

H. T. McGuire, New Castle
Conwell Banton, Wilmington
S. G. Elbert, Jr., Wilmington
I. J. MacCollum, Wyoming
J. L. Fox, Seaford

National Emergency Medical Service

J. R. Beck, Wilmington
C. L. Munson, Wilmington
W. F. Preston, Wilmington
S. H. Stradley, Wilmington
V. D. Washburn, Wilmington

Medical Economics

Ira Burns, Wilmington
J. S. McDaniel, Jr., Dover
J. E. Marvil, Laurel

Hospitals and Practice of Medicine

J. W. Howard, Wilmington
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
W. O. LaMotte, Wilmington
C. E. Wagner, Wilmington
J. S. McDaniel, Dover
J. B. Waples, Georgetown

Social Hygiene

A. D. King Wilmington
E. H. Mercer, Dover
James Beebe, Jr., Lewes

Grievance Board

G. W. K. Forrest, Wilmington
I. L. Chipman, Wilmington
J. D. Niles, Middletown
I. J. MacCollum, Wyoming
James Beebe, Lewes

WOMAN'S AUXILIARY

Mrs. Douglas M. Gay, *President*, Wilmington
Mrs. S. W. Rennie, *President-elect*, Wilmington
Mrs. E. T. O'Donnell, *Corresponding Secretary*, Wilmington
Mrs. Andrew M. Gehret, *Recording Secretary*, Wilmington
Mrs. Lawrence W. Fitchett, *Treasurer*, *Milford*

NEW CASTLE COUNTY MEDICAL SOCIETY

Meets Third Tuesday

V. D. Washburn, *President*
W. W. Lattomus, *President-elect*
S. H. Stradley, Jr.,*Vice-President*
H. H. Stroud, *Secretary*
C. M. Bancroft, *Treasurer*
E. C. Syrovatka, *Executive Secretary*

Councilors (1952): L. C. McGee, H. T. McGuire, J. C. Pierson.

Delegates (1951): E. M. Bohan, Ira Burns, Junius A. Giles, A. D. King, E. G. Laird, W. O. LaMotte, Sr., Charles Maroney, E. M. Mayerberg, W. M. Pierson, Edward Parvis, O. N. Stern, H. H. Stroud, M. A. Tarumianz.

Alternates (1951): Steven Bartoshesky, Joseph Beck, Allen Fleming, Mildred Forman, David J. King, A. G. Lessey, Wm. T. McLane, Douglas Sanders, Paul Shaw, Roger B. Thomas, R. O. Y. Warren.

Delegates (1951-52): N. L. Cannon, I. L. Chipman, Sr., J. A. Giles, A. L. Heck, Charles Levy, C. L. Munson, M. B. Pennington, J. C. Pierson, S. H. Stradley, Jr., G. W. Vaughn, V. D. Washburn.

Alternates (1951-52): L. V. Anderson, R. E. Allen, J. W. Barnhart, J. M. Barsky, Jr., W. W. Briggs, Italo Charamella, J. A. Chrzanowski, C. T. Lawrence, F. A. Jones, C. P. Johnson, T. E. Resnick, F. S. Skura, H. A. Tarrant.

MEDICAL COUNCIL OF DELAWARE

Hon. Charles S. Richards, *President;* Joseph S. McDaniel, M. D., *Secretary;* Wallace M. Johnson.

KENT COUNTY MEDICAL SOCIETY

Meets First Wednesday

R. R. Layton, Jr., *President*, Dover
J. B. Baker, *Vice-President*, Milford
J. S. McDaniel, Jr., *Secretary-Treasurer*, Dover

Councilors: C. J. Prickett, Smyrna and Wm. Marshall, Milford.

Delegates: H. V. P. Wilson, Dover, and I. J. MacCollum, Wyoming.

Alternates: J. S. McDaniel, Dover, and H. W. Smith, Harrington.

DELAWARE STATE DENTAL SOCIETY

J. S. Mack, *President*, Seaford
J. F. Maguire, *1st V. P.*, Wilmington
H. L. Kurfirst, *2nd V. P.*, Wilmington
James Krygier, *Secretary*, Wilmington
Louis Kreshtool, *Treasurer*, Wilmington
P. E. Musselman, *Delegate A.D.A.*, Newark.
Clyde Nelson, *Alternate A.D.A.*, Milford.

DELAWARE STATE BOARD OF HEALTH

I. J. MacCollum, M. D., *President*, Wyoming; Mrs. A. Louise Cochran, *Secretary*, Middletown; Mrs. Edith R. Kendall, Wilmington; C. F. Moore, D. D. S., Seaford; C. M. Moyer, M. D., Laurel: J. D. Niles, M. D., Middletown; H. N. Stayton, Jr., M. D., Wilmington; Mrs. Barbara N. Voss, Wilmington; F. I. Hudson, M. D., *Executive Secretary*, Dover.

BOARD OF MEDICAL EXAMINERS

J. S. McDaniel, *President-Secretary;* H. V. P. Wilson, *Assistant Secretary;* W. E. Bird, J. E. Marvil, G. A. Beatty.

SUSSEX COUNTY MEDICAL SOCIETY

Meets Second Thursday

O. A. James, *President*, Milford
J. L. Fox. *Vice-President*, Seaford
T. J. Tobin, *Secretary-Treasurer*, Milton

Councilors: J. W. Lynch, Seaford; A. C. Smoot, Georgetown.

Delegates: Bruce Barnes, Seaford; D. L. Bice, Seaford; C. M. Moyer, Laurel; G. M. Van Valkenburgh, Georgetown.

Alternates: W. G. Hume, Selbyville; R. L. Klingel, Rehoboth; A. C. Smoot, Georgetown; E. L. Stambaugh, Lewes.

DELAWARE ACADEMY OF MEDICINE

Open 10 A.M. to 5 P.M.

B. M. Allen, M.D., *President.*
W. M. Pierson, M.D. *First Vice-President.*
R. R. Wier, D.D.S., *Second Vice-President.*
A. M. Gehret, M.D., *Secretary.*
I. M. Flinn, M.D., *Treasurer.*
E. C. Syrovatka, J. D., *Librarian.*

DELAWARE PHARMACEUTICAL SOCIETY

J. Wallace Watson, *President*, Wilmington.
Landis Wilson, *First Vice-President*, Georgetown.
Norman Chamberlain, *Second Vice-President*, Harrington.
Grover Ashton, *Third Vice-President*, Milford.
Harry C. Zeisig. *Secretary*, Milford.
Albert Dougherty, *Treasurer*, Wilmington.

CHARLES E. WAGNER, M.D.
PRESIDENT of the MEDICAL SOCIETY of DELAWARE
1951

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 9

SEPTEMBER, 1951

Per Copy, 50c
Per Year, $4.00

MORTALITY REGISTRATION PROBLEMS

Floyd I. Hudson, M. D., M. P. H.,*
Dover, Del.

Physicians for many years have been certifying causes of death on individual death certificates. As State Registrar of Vital Statistics it is apparent from the information recorded on many certificates that there is some misunderstanding of how the cause of death should be recorded by the certifying physician. In order to clarify this situation and increase accuracy in the recording of deaths, the following is offered:

For all practical purposes the registration of deaths in Delaware is complete. This fact receives material impetus from the system requiring burial permits, issued by local and sub-registrars, upon presentation of a certificate of death. These certificates, when recorded, form a basis upon which the total mortality per unit of population for the state, and the mortality rates for special diseases such as tuberculosis, is computed.

The crude death rate shows how many persons died per unit of population each year. There are some obvious errors due to the estimating of the state population in intercensal years, but for all intents and purposes the annual crude death rate and special death rates are remarkably accurate.

International List of Causes of Death

We have been accustomed to using this statistical classification during the lifetime of most of us for the purpose of selecting an acceptable term to designate a cause of death. It was realized many years ago that no useful data could come from compiling a list of deaths described by the thousands of terms used by medical science. Therefore in 1893 the International Statistical Institute meeting in Chicago adopted a list of causes of deaths which forms a basis for our present classification. This list was of great assistance in recording death statistics which could be compared state-to-state. However, the need for international comparisons was recognized, and a conference was held in Paris in 1900 to accomplish a list of causes of death which would be acceptable throughout the world. Conferences to revise this international list of causes of death were held, also in Paris, in 1910, 1920, 1929 and 1938. In 1948 the Paris Conference had become fully aware of the necessity of a standard list, not only for recording deaths, but also for recording diseases and injuries. Out of the 1948 Paris Conference came the sixth revision of the list, which was expanded to take in causes of sickness, and which was termed "International Statistical Classification of Diseases, Injuries, and Causes of Death."

The changes made in the sixth revision have affected in many instances the comparability of death statistics recorded up to 1949 with those recorded since that time. For example, under the old rules a person dying of incarcerated hernia along with tuberculosis would have been assigned to tuberculosis. Under the revised classification such a death would be ascribed to the hernia. However, keeping the revisions in mind, it is possible to keep records so that corrections can be made in many instances.

Selection of Appropriate Cause of Death

From the point of view of a Health Officer, it is of importance to first ascertain the underlying cause; that is, the first occurrence leading up to a death in order that preventive measures may be considered to control future untimely deaths from the same cause or causes. The data for the medical certification must of necessity be furnished by the attending physician. In order to secure this information in conformance with the recommendation of the World Health Organization, the Medical

---

*Executive Secretary and Registrar of Vital Statistics, Delaware State Board of Health.

Certification on Delaware death certificates was changed beginning in 1949 as reproduced below:

Cause of Death

I. Disease or Condition Directly Leading To Death
(This does not mean the mode of dying, e.g. heart failure, asthenia, etc. It means the disease, injury or complication which caused death.)
(a) ....

Antecedent Causes

Diseases or conditions, if any, giving rise to the above cause (a) stating the underlying condition last.
Due to
(b) ....
Due to
(c) ....

II. Other Significant Conditions contributing to the death, but not related to the disease or condition causing it.
....

Part I is intended to show the cause leading to death and antecedent causes if there are any. The *underlying or direct cause* should be written last.

Part II is to show other significant conditions leading to death but not related to the direct cause.

When a single cause describes the death adequately — as lobar pneumonia — it should be entered in line I (a), and lines I (b) and I (c) left blank. Should two or more causes be entered in logical order, the one last shown will normally be considered the underlying or direct cause. Part II is important because it at times furnishes clarification of data in Part I and also gives us the number of persons who died in a given period who also suffered from another disease which did not cause the death. For example it shows us how many of the deceased had cancer and yet died of some other condition. Therefore, every physician who signs a death certificate is asked to recognize the importance of entering the causes of death in proper order so that there will be no doubt as to which in his opinion is the underlying one. It is realized that in certain cases information available to the physician may be incomplete or vague and that an adequate description of the cause of death may be most difficult.

The following examples of certifications will serve to illustrate proper procedure:

1) I—a Peritonitis
b Intestinal Obstruction
c Appendicitis
II Pulmonary Tuberculosis
Before 1949 this death would have been assigned to tuberculosis; now it is assigned to appendicitis.

2) I—a Uremia
b Acute Glomerulo Nephritis
c Septic sore throat
This death is assigned to the last given cause under both the old and new systems.

3) Ia Gangrene of left foot
b Septicemia
c Diabetes
This death would be assigned to the last cause; the other two conditions under the new international rules are considered secondary to the diabetes.

4) Ia Coronary Occlusion
b ————
c ————
II Cancer of prostate
The new rules give this to coronary occlusion; under the 1938 rules this would have been assigned to cancer.

The last revision of the International List and the accompanying changes in statistical methods have brought about a situation wherein death statistics prior to 1949 are no longer directly comparable with those since the implementation of the new system in the above mentioned year. This is unfortunate in some respects, but the gain will eventually outweigh the loss in giving us much better relative weights for the numerous causes of death, and these causes will be comparable state-to-state and nation-to-nation.

MEDICAL ASPECTS OF CIVILIAN DEFENSE

Edward F. Gliwa, M. D.*
Wilmington, Del.

Although civilian defense is the responsibility of the entire community, the medical and allied professions will play a major role in the event of total war, especially since the advent of atomic missiles. One need only recall the amount of destruction and the number of casualties which resulted from the use of the atomic bomb on the two Japanese cities during World War II to realize the importance of preparing a civilian defense program. The medical problems of major importance are those dealing with the treatment of casualties and the prevention of epidemic diseases. It stands to reason that the proper time to prepare for such a large catastrophe is before, not after the disaster occurs; and in this way we can expect to save many lives which ordinarily would be lost.

---

*Deputy State Health Officer for New Castle County, Delaware State Board of Health.

To meet an emergency of this type, many buildings constructed for other purposes will need to be used as emergency hospitals. In order to formulate a reasonable plan, a large number of persons whose normal activities are quite different from medical work will be needed. At least one person in ten must be instructed in first-aid techniques; also, many persons in fields allied to medicine will need training to do particular jobs ordinarily considered to be those for physicians, skilled nurses, anesthetists, laboratory technicians and the like. It is our responsibility as physicians to train or to supervise the training of these individuals. The training of an adequate number of personnel will be an enormous task, but not an impossible one.

Other needs will be to provide personnel for the detection of radiation, chemical, and biological warfare hazards. Facilities for evacuation and transportation of casualties must be maintained. An adequate supply of food, clothing, and medical equipment must be procured and stored. It is our responsibility to assist in the selection of medical equipment to assure a near adequate supply for the treatment of the resulting casualties.

Although the local city and state government is responsible for the organization of a civilian defense program, we should all familiarize ourselves with the problems involved, and should stimulate and accelerate a sound program.

Since the medical profession will represent an integral part of a defense program, we must take a leading part in formulating a state of real preparation which will reduce the human toll in the event of total war.

NURSING PARTICIPATION IN DELAWARE'S CIVIL DEFENSE PROGRAM

Mary M. Klaes, R. N., B. S.*,
Dover, Del.

Nursing services are always auxiliary to medical services, and nowhere is this truer than in the civil defense organization on the national, state, or local level. When one considers the structure of civil defense which must reach out into every phase of everyday life one can readily see why the over-all structure of civil defense must of necessity be complex. It is therefore most important that all nursing civil defense activities be planned and carried out within the framework of the organization and plans of the Medical Division of the State Office of Civil Defense.

In Delaware the Civil Defense Nursing Chairman was appointed by the director of the medical services division. In order to coordinate the civil defense efforts of the nursing profession with that of the medical division, the civil defense nursing chairman of the Delaware office of Civil Defense was also appointed by the Delaware State Nurses' Association as their civil defense chairman.

A Civil Defense Nursing Committee was set up which was composed of the Chairman, the President, and the Executive Secretary of the Delaware State Nurses' Association, Industrial Nurses' Section, Private Duty Section, Public Health Nurses Section and the General Duty Section. A representative from each of the other nurses organizations in Delaware, the Delaware League of Nursing Education, Delaware Chapter American Red Cross, and the Wilmington Visiting Nurses' Association are also included in the membership of the Civil Defense Nursing Committee. This broad membership reaches into all branches of the nursing profession in Delaware. A chairman for New Castle County including the City of Wilmington has been appointed by the group. It is felt that every area of professional nursing activities can be reached and utilized by the Medical Division of the State Office of Civil Defense.

In November, 1950, six nurses from Delaware attended the week's course of instruction for professional nurses in "Nursing Aspects of Atomic Warfare" which was conducted at the University of Rochester by personnel of the Atomic Energy Commission. Upon their return the nurses presented the material to other nursing groups in Delaware.

---

*Director, Division of Public Health Nursing, Delaware State Board of Health, and Chairman State Civil Defense Nursing Committee.

An Institute on Nursing Aspects of Atomic Warfare was planned and conducted by the committee in Wilmington on January 17th and 18th, 1951. Invitations were sent to all nurses with this foreword: "This is being sent to you because you are a professional registered nurse. We know all professional nurses have always shouldered their responsibility to give nursing care in time of disaster and we are confident they will continue this fine record."

The program content of the institute was planned to give nurses a background of information which will be helpful if disaster of major proportions occurs. The response to the invitation was overwhelming, a total of 738 nurses registered for the course at Delaware Hospital auditorium and at the Warner High School.

At the present time a roster is being prepared by the Civil Defense Nursing Committee which will list not only the name and address of every registered nurse in Delaware, but also the name and address of her place of employment, area of specialization and her availability. It is necessary to know these details in order that assignments can be made efficiently.

HOSPITAL SURVEY AND CONSTRUCTION PROGRAM IN DELAWARE

C. P. KNIGHT, M. D.,*
Dover, Del.

In August of 1946 a Congressional Act, popularly known as the Hill-Burton Act, was approved by the President of the United States. This legislation (Public Law #725) launched a comprehensive program of federal and state cooperation to proivde all the states and territories with adequate hospital and health center facilities. The purpose of the Act is to assist the several states and territories to make an inventory and to evaluate the existing hospitals and health center facilities; to develop programs for construction of various facilities, and to construct the needed public and other non-profit hospitals and health centers in accordance with the program.

To assist in construction, Congress authorized 75 million dollars to be appropriated for the fiscal year ending June 30, 1947 and for each of the four succeeding years. These funds are alloted among the states in accordance with a formula based on population and per capita income. This makes available considerably larger amounts per capita to low income states.

To be eligible to receive federal funds each state must submit a plan and have it approved by the Surgeon General of the Public Health Service. One of the main requirements for approval is that the state must designate a single state agency to administer or supervise administration of a plan, and provide for the appointment of a state advisory committee or council. The plan must further provide for construction, insofar as financial resources permit, in the order of an established priority based on relative need.

FEDERAL FUND ALLOTMENT TO DELAWARE

The fact that Delaware is a high per capita income state, the allotment is rather small compared to that of many states. When the Hill-Burton Act became law the allotment to Delaware was only $100,000 dollars per year for five years; however, in October 1948 the Act was amended doubling the federal appropriation; therefore Delaware received $200,000 per year from that date. The total estimated allotment for five years is $800,000. The states allotment may be drawn upon to pay approximately 1/3 of the cost of approved projects within the state; however, the law allowed the State Agency to establish a percentage of participation, so instead of the usual 1/3 federal share the percentage of participation was increased to 37.6% of the total cost of construction including purchase of certain equipment.

SURVEY AND PLANNING

Prior to the federal enactment, the Delaware legislature passed a law authorizing and directing the State Board of Health to make a survey of existing public and private hospitals and health centers; to evaluate their sufficiency; and to compile data and conclusions and to provide for the acceptance and expenditure of funds.

---

*Deputy State Health Officer and Director of Hospital Planning, Delaware State Board of Health.

The survey was started in the latter part of 1947 and finished in June of 1948. Based on this survey a state plan was formulated and was approved by the Surgeon General of the U. S. Public Health Service July 1, 1948. The prime object of the survey was to show the needs if any for additional hospital beds for medical care throughout the state.

In order to facilitate the equitable distribution of federal funds, Delaware's plan established a system of priority. This system gives full consideration to the factors outlined in the Hill-Burton Act, namely, the relative need for beds in an area and provisions for services for persons living in rural areas. All area priorities are based on the actual need as compared with a number of beds available to serve the community. In Delaware the areas were arranged in four priority groups on the basis of percentages of needs met as follows:

1 area in Group A showed 0-39.9 of needs met.

2 areas in Group B showed 40%-60% of needs met.

There was no area falling in Group C where 60%-80% would have been the percentages of needs met.

2 areas in Group D showed 80%-100% of needs met.

It was found that the highest percentage of priority was in rural areas. To be more specific, the lack of hospital facilities was greatest in the southwest portion of Sussex County, while the New Castle County area including Wilmington had been well taken care of with facilities for medical care. In other words the western part of Sussex County fell within the group of "A" priority while the Wilmington and New Castle County area was in Group "D". Kent County and East Sussex comes fully under Group "B" priority. It should be further explained that if a community in Group "A" priority could not, or would not, participate in the plan during a given fiscal year it was permissible for a community in the next priority group to request participation. Kent General Hospital, in Group "B," could qualify and made application for participation. Their application was for the purpose of expansion of the existing hospital of obtaining additional needed hospital beds. To be more explicit, at the time Kent General Hospital made application, no community in Group "A," for various reasons, was prepared to take advantage of federal participation.

Before any application could be recommended for approval certain assurances had to be obtained from the applicant among which are: (1) that the facility will provide service without discrimination as to race, creed, or color, and will furnish a reasonable volume of free patient care (in areas where separate facilities are provided for separate population groups, the nondiscrimination requirement may be met through the planning of facilities which will make equitable provision for these groups); (2) that the facility, when completed, will be operated and maintained according to minimum standards set by the state; (3) that the construction contract will prescribe the minimum rates of pay for laborers and mechanics, as established by the Secretary of Labor; (4) that actual construction work will be performed by the lump sum (fixed price) contract method, and that adequate methods of obtaining competitive bidding will be used; (5) that adequate engineering or architectural supervision and inspection of the project will be provided to assure conformance with approved plans and specifications.

At this writing there are three projects under way and one finished. Kent General Hospital has now opened the new construction of 25 additional beds for the admission of patients. The projects listed in order of date of application are as follows:

No. 1—Kent General Hospital—expansion
No. 2—Nanticoke Memorial Hospital—new construction
No. 3—Delaware State Hospital—expansion
No. 4—Milford Memorial Hospital—expansion and construction of Nurses Home and Training Center

Construction costs for hospitals has greatly increased in the past few years and is continuing to climb. Since about 1947 the cost of construction per hospital bed has about tripled. Although construction costs seem exorbitant, serious thought had to be given looking forward to the preservation of health and life of the citizens of the state. The cost per project is as follows:

Kent General Hospital—$657,887.00.
Nanticoke Memorial Hospital—$523,492.00.
Delaware State Hospital—$719,830.00.
Milford Memorial Hospital—$960,993.00.

At the present time the Nanticoke Memorial Hospital is constructing facilities for approximately thirty beds, but the community is planning to expand this as it is felt that in the future thirty beds will not suffice to meet the needs of medical care for the people in that part of the state.

At its last session the Delaware legislature passed an Act authorizing new construction for the care of tuberculosis patients. It is expected that federal funds will be available at the time to assist this new construction.

With all the new construction now under way there will for the present be approximately 95 additional beds available in general hospitals and 234 additional beds in the state-owned institution for mental cases. While this is encouraging the survey originally made showed that at least 80 more beds are needed in the Kent County area; 83 in southeastern portion of Sussex County, and 55 in southwestern part of Sussex County. If we are to meet the needs of the communities, and to give the people sufficient hospital care, the beds mentioned above should be constructed.

REFERENCES

Vane M. Hoge, M. D.; Progress Report, Public Health Reports, Vol. 64, No. 32. Delaware State Plan, Revision June, 1950.

THE DIAGNOSIS OF CONGENITAL SYPHILIS

Winder L. Porter, M. D., M. P. H.,*
Dover, Del.

The Delaware State Board of Health has recently completed an exhaustive survey of the problem of congenital syphilis in the state. The study embraced more than one hundred cases seen in the clinics of the state during a period of two years. A detailed report on the study was presented at the Regional Venereal Disease Control Conference conducted by the United States Public Health Service in New York City on May 18, 1951.

Thirty-five new cases of congenital syphilis were encountered in the clinics during the period and nearly an equal number was reported by private physicians and institutions. The continued occurrence and persistent presence of this entirely preventable infection should be cause for much concern and indeed for shame. While perhaps some cases of congenital syphilis will continue to appear as long as any syphilis is endemic, opportunities are lost not only to prevent these infections but also to discover existing cases and bring them to treatment. The survey revealed many of these lost opportunities and also brought to light a number of problems encountered in the recognition of the disease.

The serologic test is itself responsible for much duress as the most definitive course necessitates quantitative estimation of the reagin titer. While there are tests utilizing blood collected in capillary tubes, the tests in general use require large volumes of blood and therefore more effort and attendant discomfort for the infant than parent or physician is willing to countenance. Refinement and more extensive use of tests adaptable to small quantities of blood are necessary steps towards earlier detection of congenital syphilis.

Interpretation of the serologic test is as important as the test itself. Per se, serologic tests on blood from the umbilical cord or from the newborn infant are of no value in establishing whether the infant is infected with syphilis, although they may have considerable value when correlated with all the clinical information in the case. Passive transfer of reagin from the mother's blood may cause a positive test in a child who itself has escaped infection, while an infected infant may give a negative test particularly when the mother acquired her disease late in pregnancy and there has been little time for serologic response. A single test at the age of three or four months is much more indicative of the status of the infant than the test secured at birth. Quantitative serologic testing of the newborn is of value, principally to establish a baseline. The true situation can then be well revealed by a series of tests at intervals of a few weeks. There usually is a prompt decline to negative when the child has escaped infection while the diseased child will develop or sustain a high titer although occasionally there is an initial fall in titer with a subsequent delayed rise that becomes definite in a few months.

---

*Deputy State Health Officer at large, Delaware State Board of Health.

Increasing adoption of penicillin treatment makes it appropriate to mention the serologic response to treatment of congenital syphilis. Not unlike the result with acquired syphilis, a gratifying high percentage of cases show reversal of serology to negative when treated early, while the response in late cases is uncertain and of considerable less significance. Need for further treatment of these cases must be determined by the clinical course rather than the serologic response.

Early recognition of congenital syphilis in some instances must rest on clinical grounds and an alert suspiciousness. The classical picture of a weazened infant with potbelly and the face of an old man is not difficult to recognize, but interpretation of some of the less specific signs and symptoms of congenital syphilis offers many pitfalls. Perhaps most common is to pronounce "snuffles" in a newborn who is not doing well and has a runny nose, especially when the mother has a history of syphilis. It is not surprising that many of these respond almost dramatically to penicillin which after all is effective against a wide range of organisms. But one must be mindful that snuffles is seldom a solitary finding, but rather is usually accompanied by an actual rhinitis which may be hemorrhagic, with erosive lesions about the mouth and other distinctive skin eruptions. Furthermore, it is not apt to be seen in the newborn nursery as its appearance is usually delayed until the infant is a few weeks old. When seen earlier, there usually is other severe involvement and a correspondingly poor prognosis.

The rash of congenital syphilis is often distinctive, but eczema, diaper dermatitis and other benign skin disorders of infancy are mistaken for it. Not even when the eruption has a copper hue and involves the palms and soles, is it necessarily syphilitic. Conversely, syphilis is often passed off as chicken pox, impetigo or allergic dermatitis. Fortunately, darkfield examination can often promptly clear up a doubtful situation.

Changes in the bones and cartilages are common features of congenital lues but one must be wary of diagnoses based upon those changes alone. The x-ray appearance may be distinctive but even the experienced roentgenologist is at times hard pressed to distinguish them from nutritional or other disorders, and is relieved to have serological or other confirmation. Similarly, enlargement of the liver or spleen with or without jaundice may also suggest syphilis but should comprise only part of a total picture and needs corroborative evidence for indictment as a leutic manifestation.

Recognition of later stages of congenital syphilis is simplified when one bears in mind that the course is similar to that of acquired syphilis with the important modification that its occurrence during a period of rapid growth and development may seriously interfere with these processes. There, however, is the general pattern of a self-limiting early infection followed by an indefinite latent period with the ultimate appearance of late signs which are recognized as stigmata whether they be active lesions or scars of previous processes. Thorough acquaintance with the manifold forms of these stigmata is essential as there likewise is the tendency for progressive spontaneous sero-reversal with an increasing number of late cases that escape detection by the serologic test or ordinary clinical examination. There may be reactivation of reagin response when late lesions flare up, but the examiner of children and young adults can often detect evidence of congenital syphilis without the aid of the blood test. Hutchinsonian teeth, interstitial keratitis and mental deficiency are familiar signs, but the examiner must also be alert for frontal bossing, scarred corneae, pegged teeth, circumoral fissuring, deafness, optic nerve palsies, swollen knees and saber shins. Experience alone can give full appreciation for the characteristic facies, but half of the battle is to become conscious of its existence and alert for its appearance. The disease as a whole is a challenge to clinical acumen, but actually the sequence of events is orderly and fits readily into a comprehensible picture.

THE CANCER PROGRAM OF THE STATE BOARD OF HEALTH

Report No. 5

George F. Campana, M. D., M. P. H.,*
and
William H. Bandy, M. D., **
Dover, Del.

Since its beginning in 1947 the cancer program has steadily progressed. A report of this progress has been made to the physicians of Delaware each year in *The Journal.* In this, the 5th Annual Report, we will consider first our activities for the past year, and secondly our plans for the coming year.

Statistical tables for cancer incidence based upon reporting of neoplasm by the practicing physicians of the state are presented. It is felt that the reporting of neoplasms by physicians is practically complete. During the coming year a thorough check of our records will be made in order to determine the exact percentage of completeness of reporting. We appreciate the cooperation of the physicians in these efforts. These tables are set up along the same lines as those published in previous years. Hodgkins disease and leukemia are included in all tables.

Table 1
Cancer Incidence of the White Population by Age, Sex and Site
Delaware 1950

SITE	SEX	ALL AGES	-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90 99-	AGE UNKNOWN	
ALL SITES	M		4	3	7	13	40	57	88	87	32	0	17	348
	F		4	1	11	32	64	87	94	50	22	1	10	376
BUCCAL CAVITY	M	20	0	0	0	0	2	3	7	5	2	0	1	
AND PHARYNX	F	6	1	0	0	0	1	1	2	1	0	0	0	
DIGESTIVE SYSTEM	M	68	0	1	1	2	8	14	20	16	4	0	2	
AND PERITONEUM	F	63	0	0	3	2	8	15	25	7	2	0	1	
RESPIRATORY	M	29	0	0	0	0	2	12	10	4	0	0	1	
SYSTEM	F	2	0	0	0	0	0	0	2	0	0	0	0	
UTERUS	F	87	0	0	2	15	19	22	23	2	1	0	3	
OTHER GENITALIA	F	25	0	0		4	7	7	4	3		0	0	
BREAST	F	64	0	0	1	6	15	8	18	10	5	0	1	
GENITAL ORGANS	M	33	0	0	4	2	4	0	8	13	2	0	0	
URINARY	M	24	0	0	0	1	2	5	7	7	2	0	0	
SYSTEM	F	11	1	0	0	0	0	2	3	3	2	0	0	
SKIN	M	80	0	0	1	2	6	13	15	23	13		7	
	F	58	0	0	1	1	9	18	7	12	5	1	4	
ALL OTHER	M	69	2	0	0	6	8	8	18	14	0	0	6	
SITES	F	50	0	0	4	1	5	13	10	9	0	0	1	

Source: Division of Cancer Control, State Board of Health, Delaware.

Table 2
Cancer Incidence by Site, Sex, Color and Region
Delaware 1950

		Wilmington		New Castle County exc. Wilmington		Kent County		Sussex County		Delaware		% By Site of all White Cases	% All White Cases* U. S.
		White	Col.	White	Col.	White	Col.	White	Col.	White	Col.		
BUCCAL CAVITY	Male	7	1	2	0	6	2	5	0	20	3		10.6
	Female	4	0	1	0	0	0	1	0	6	0	3.7	2.0
DIGESTIVE SYSTEM	Male	29	4	14	2	11	0	14	2	68	8		36.4
AND PERITONEUM	Female	31	4	17	3	5	2	10	2	63	11	19.0	22.9
RESPIRATORY SYSTEM	Male	15	2	8	0	3	0	3	0	29	2		8.0
	Female	1	0	1	0	0	0	0	0	2	0	4.2	1.5
UTERUS	Female	41	10	24	2	9	1	13	1	87	14	12.8	21.7
OTHER GENITALIA	Female	11	2	4	0	5	0	5	1	25	3	3.6	5.7
BREAST	Male	2	0	3	0	0	0	0	0	5	0		23.7
	Female	29	3	15	0	12	1	8	2	64	6	9.5	
MALE GENITAL ORGANS	Male	11	3	9	2	6	1	7	0	33	6	5.0	
URINARY TRACT	Male	11	1	7	1	2	1	4	0	24	3		7.2
	Female	7	1	2	0	1	0	1	0	11	1	5.0	3.4
SKIN	Male	39	0	17	0	11	0	13	0	80	0		17.4
	Female	33	0	13	0	5	0	7	0	58	0	17.5	11.4
NERVOUS SYSTEM	Male	1	0	5	0	0	0	1	0	7	0		
	Female	2	0	2	0	0	0	0	0	4	0	1.4	
HODGKINS DISEASE	Male	3	1	1	0	0	0	1	0	5	1		
	Female	2	0	1	0	0	0	0	0	3	0	1.1	
LEUKEMIA	Male	3	0	2	0	0	1	3	0	8	1		
	Female	2	0	1	0	0	0	0	0	3	0	1.5	
ALL OTHER SITES	Male	29	3	11	0	12	0	17	2	69	5		9.4
	Female	27	0	6	0	7	0	10	0	50	0	15.7	7.7
TOTAL BY SEX & RACE	Male	150	15	79	5	51	5	68	4	348	29		100.0
	Female	190	20	87	5	44	4	55	6	376	35		100.0
TOTAL		340	35	166	10	95	9	123	10	724	64		

*Based on 10 urban areas of the United States, 1937-1939
Source: Division of Cancer Control, State Board of Health, Delaware

---

*Director, Division of Preventable Diseases, ** Acting Director, Division of Cancer Control, Delaware State Board of Health.

Table 3
Cancer Incidence by Age, Sex, Color and Region
Delaware 1950

AGE AND SEX		Delaware		Sussex		Kent		New Castle excluding Wilmington		Wilmington	
		White	Col.	White	Col.	White	Col.	White	Col.	White	Col.
ALL AGES	M	348	29	68	4	51	5	79	5	150	15
	F	376	35	55	6	44	4	87	5	190	20
- 9	M	4	0	2	0	0	0	0	0	2	0
	F	4	0	0	0	0	0	2	0	2	0
10 - 19	M	3	1	0	0	1	1	2	0	0	0
	F	1	0	0	0	0	0	0	0	1	0
20 - 29	M	7	2	0	0	0	0	4	1	3	1
	F	11	2	3	0	0	0	3	0	5	2
30 - 39	M	13	1	2	0	2	0	4	0	5	1
	F	32	8	6	2	1	1	10	0	15	5
40 - 49	M	40	3	8	0	7	0	9	0	16	3
	F	64	8	12	2	8	1	14	0	30	5
50 - 59	M	57	7	8	0	8	1	15	1	26	5
	F	87	7	10	2	14	0	19	4	44	1
60 - 69	M	88	11	17	4	13	2	22	1	36	4
	F	94	7	12	0	11	1	23	0	48	6
70 - 79	M	87	2	19	0	15	0	15	2	38	0
	F	50	3	9	0	4	1	8	1	29	1
80 - 89	M	32	1	7	0	4	1	6	0	15	0
	F	22	0	3	0	3	0	5	0	11	0
90 - 99	M	0	0	0	0	0	0	0	0	0	0
	F	1	0	0	0	0	0	0	0	1	0
100 -	M	0	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0	0	0
Age	M	17	1	5	0	1	0	2	0	9	1
Unknown		10	0	0	0	3	0	3	0	4	0

Source: Division of Cancer Control, State Board of Health, Delaware

The Cancer Bulletin, Delaware edition, continues to be mailed every two months to all physicians and dentists on our mailing list. If we have omitted any physicians or dentists from the mailing list we would appreciate being informed of the omission. We have had several requests from physicians outside the state for this publication. It is gratifying to report the widespread interest in this publication.

Follow-up services by the generalized nursing staff of the State Board of Health are available to all physicians. More requests for such service are being received each year. In practically all instances the follow-up visits have resulted in return of the patient to the physician or information of his condition obtained for the physician.

Results of our three new projects of the past year are as follows:

(1) The Mobile Cancer Detection Unit. All communities with the exception of those served by Cancer Detection Centers of the hospitals and American Cancer Society have been visited at least every six months. For the twelve months ending August 1, 1951, 1416 examinations were made. Many noncancerous conditions were found and referred to their physicians for treatment. Five early carcinomas of the uterine cervix were discovered and brought to treatment. It is planned to continue operation of the Mobile Cancer Detection Unit.

(2) Provision for pathological examinations and biopsy specimens. This service has been used in a limited manner by the physicians. It is hoped that more use will be made of this service during the coming year.

(3) Film on self-examination of breast. This film was first shown to all Medical Societies and subsequently to many women's clubs and groups. A large number of pamphlets in color on self examination of the breast have been procured as a supplement to this film. A copy of this pamphlet has been sent to each physician in the State. Further copies are available upon request if desired for office distribution. Another film has been procured and has been shown to the Medical Society. This film for professional groups deals with the diagnosis of gastro-intestinal cancer.

New Projects for the Coming Years

(1) A new system of record keeping utilizing punch cards suitable for analysis is being set up. It will take considerable time to transfer the information from the more than 6,000 old records to the new system. It is expected that this will be completed by July 1, 1952.

(2) Provisions for Papanicolaou cytologic

examination. During the past year a laboratory technician has attended Cornell University Medical School for training in Dr. Papanicolaou's method of cytological examination. This technician is now working in the State Board of Health Laboratory staining and screening the cervical smears prepared on the Mobile Cancer Detection Unit. She is now prepared to give this service to the medical profession at large. Upon request physicians will be furnished materials necessary for the preparation of these slides. Reports of negative smears will be sent out from the State Board of Health Laboratory. Smears of Grade III and above are forwarded to a pathologist in Wilmington for study and grading.

WE LIVE LONGER

Cecil A. Marshall, B. S.,*
Dover, Del.

The extent to which man has succeeded in gaining control over his environment is perhaps best measured by the increase in his average length of life. In our country the record has been exceedingly favorable. The average length of life in the United States jumped from 49½ years at the beginning of the century to about 67½ years at the present time. Females made a better showing than males among both white and colored persons, thus widening further the longevity between the sexes. In 1947 the expectation of life among white females had exceeded by one-half year the biblical "three score and ten." For white males it was 65½ years. For non-whites the figures for females and males were 61½ and 57½ respectively. The prospects are bright for adding more years to the average length of life in the near future. The optimistic outlook is based on the assumption that wider and more intensive application will be made of existing knowledge in medical and sanitary science. It is expected at the same time, that future advances will be made in our standard of living, through better food and dietary habits, improved housing conditions, more ample protection against occupational hazards and accidents generally. These forces reinforcing each other can effect further reductions in mortality and thus improve longevity. The marked gains that we have made reflect the advances in medical science and practice as well as general sanitary and environmental living conditions.

The death rate has reached an all time low. It is only about one-half that in 1911. Every age has benefited from the decline in mortality, but the decreases have been the largest in childhood and early adult life. Since 1910 the decline in mortality for males under 35 years has been 70% and 80% for females. But even in the 65-74 age group the decline has been 37 and 47 percent respectively for males and females.

An important factor in the favorable mortality record of recent years has been the relatively low incidence of the respiratory disease. In addition, the effective use of the newer methods of treatment reduced sharply the death rate from pneumonia. Only 6 years ago the death rate for influenza and pneumonia was twice as high as at present. Even more notable has been the record for tuberculosis. In the past 40 years this disease has dropped from first to seventh place. In the post war period the drop in mortality has proceeded at an accelerated rate, averaging about 10% a year. If this keeps up tuberculosis will soon be taking its place among the minor causes of death. Some factors behind these impressive gains have been the raised standard of living, the increased facilities for the detection and treatment of the disease, the isolation of large numbers of open cases, and the educational campaign to prevent the spread of the disease.

The drop in mortality from the principal communicable diseases of childhood has been nothing short of spectacular. For the four diseases of childhood — Measles, scarlet fever, whooping cough and diphtheria the death rate has declined nearly 98% in the past forty years. The infectious diseases have heretofore been the major targets of the medical sciences and the public health movement generally.

The hazards incidental to child bearing, which had long resisted efforts to control them, have been greatly reduced in fairly recent years. In the general population of the United States, the maternal mortality dropped from 4 per 1,000 live births in 1939 to about 1 per 1,000 in 1949.

---

*Statistician, Delaware State Board of Health.

Diseases recording minimum death rates in 1949 include, in addition to those already mentioned, syphilis, appendicitis and the enteric group. Diarrhea and enteritis, and typhoid fever were important causes of death 40 years ago. In contrast with the marked downward trend in the mortality from many of the infectious diseases, the recorded death rates from the diseases of middle and later life have shown little change or have increased in the past 40 years. Much of this increase has arisen from the aging of the population. If allowance is made for the increased recognition and reporting of cancer as a cause of death it may well be that no rise has actually taken place in the mortality from cancer. The years of life sacrificed to cancer are second only to the toll exacted by the cardiovascular-renal diseases. The elimination of cancer as a cause of death would add 1.8 years to the expectation of life of white males and 2.5 years to that of white females. The figures vary little from birth to age 50, indicating that the increase in longevity would be achieved for the most part through the saving of people who are past midlife.

Deaths from diseases of the heart, arteries and kidneys are a dominant factor in the total mortality and account for nearly half of the total causes of death. By far the greatest increase in the expectation of life at birth would be attained through the elimination of the cardiovascular-renal diseases; the gain would be almost 10 years for white men and 9 years for white women. The figures may appear surprisingly large in view of the fact that the mortality from these diseases shows a greater concentration at the older ages than any other cause of death. Yet such is the magnitude of the death rate from the cardiovascular-renal diseases past midlife that if they were eliminated, the remaining years of life to a man aged 50 would be increased an average of 10 years — from 22 additional years of life to 32 years. It may be unrealistic to talk about wiping out cardiovascular-renal diseases, but postponement is within the realm of reality.

The marked reduction in the death rate from accidents represents in large measure the reduced frequency of fatal mishaps in the home and industry. But even the death rate from motor vehicle accidents has been declining in the past three years. In fact, the rate in 1949 was the lowest in three decades except for the year 1943, when travel was restricted. Based on mileage, the death rate from motor vehicle accidents reached a new minimum in 1949.

Remarkable progress has been made in improving the health and longevity of the American people in the past half century, and the outlook is bright for future gains. More effective use of the measures which have already proved so successful will yield a still greater harvest of life. More and better medical and hospital facilities and services will likewise make a contribution toward this end, as will the intensive program of health education. In addition, newer knowledge is rapidly being accumulated and put into practice. Major efforts from now on need to be concentrated on solving the problem of chronic diseases, which have become the chief cause of premature death in our country.

STREAM MORBIDITY REPORT

A. Joel Kaplovsky, Ph.D.,*
Dover, Del.

During the past fifteen months various streams within the state of Delaware have been subjected to examination, analysis, and diagnosis relative to their physical, chemical, and biological well-being. Emphasis was placed upon the present causes of "illness," future detrimental influences, and needed treatment for satisfactory recovery.

Numerous people have the erroneous conception that water, our most important resource, is unlimited. Its preservation is a matter of paramount importance. Although water, like the human body, has the ability to recover or self-purify itself after receiving foreign bodies, it cannot do so if the foreign bodies are too numerous or excessive. The time for a body of fresh water, within our state, to flow from its headwaters to the Delaware River or Bay is relatively short, thus decreasing the period of time for self-purification. Consequently, the amount of pollution the stream may digest without ill effect becomes a limiting factor of its self-purification.

Our first stream survey was made on the

---

*Supervising Engineer, Water Pollution Commission, State of Delaware.

Broadkill River Drainage Basin. Analyses and measurements were made on the waters of this basin, and it was concluded that the sources of infection to the Broadkill River originate from poultry packing, canning, and municipal wastes. The degree of contamination from each varies considerably. Based upon the findings, recommendations were made to the offenders relative to their specific problems.

A study made of the Mispillion River Drainage Basin indicated the sources of pollution affecting the quality of the waters within this basin originate from municipal, canning and poultry packing establishments.

The Appoquinimink River Drainage Basin was also investigated, and was found to be relatively free of damaging pollution.

Considerable time and effort had been expended in making the study of the Christina River Drainage Basin during the past ten months. This basin is the largest and most complex in the state of Delaware. It includes the Upper Christina River, White Clay, Red Clay and Brandywine Creeks, with all their tributaries. Three surface domestic water supplies of our state are obtained from these streams and given treatment before human consumption. To complicate matters, approximately sixty-five per cent of the state's population reside in this area, in addition to a heavy concentration of industry. Each discharges much pollution to the streams.

Coinciding with our study of the Christina Basin, major strides are being taken to expedite the construction of numerous sewer interceptors which will, in the near future, discharge into the anticipated Wilmington Waste Treatment Plant. Most of the present pollution problems in this basin area will be alleviated. This removal of pollution from the tributaries of the Christina River should prove a boom to the protection of health, comfort and property of the people throughout this part of the state.

FLUORIDATION OF PUBLIC WATER SUPPLIES

Margaret H. Jeffreys*
and
Donald K. Harmeson
Dover, Del.

Recent discoveries in the field of dentistry now point to the fluoridation of public water supplies as the most effective means of reducing tooth decay among children. Because of its easy application for large numbers of people and its relatively low cost, it is believed by the American Dental Association[1] to hold more hope for the prevention of caries than any of the preventive methods in present usage, including toothbrushing, restriction in the consumption of concentrated sugar and topical application of sodium fluoride.

The present interest in fluoridation of public water supplies as a means of reducing tooth decay emanates from early studies to determine the cause of dental fluorosis or mottled enamel. Although reports indicating an association between mottled enamel and a low incidence of caries had been received from other parts of the world where public waters were known to contain fluorides, such studies had not been attempted here.

Black and McKay[2] were the first to investigate the possibilities in this country when they examined a group of children in the Rocky Mountain area where dental fluorosis was known to be prevalent, and reported fewer carious teeth than were found among children in non-endemic areas. Bunting, Crowley, Hard and Keller[3] investigated the dental caries problem in other areas where dental fluorosis is endemic and made a report similar to Black and McKay.

While McKay[4] was the first to associate fluorosis with water in 1925, the role played by fluorides as a causative agent was not established until 1931. Since that time numerous studies have been made in both endemic and non-endemic areas throughout the country. In a report published in 1938, H. C. Dean[5] of the United States Public Health Service pointed out that there were more caries-free children in various areas of endemic fluorosis in the West and Middle West than there were in those communities where the water contained little or no fluoride.

---

*Director, Division of Oral Hygiene, and Director, Division of Sanitary Engineering, Delaware State Board of Health.

When scientific research covering a period of several years eventually proved the relationship between fluoridated waters, dental fluoris and tooth decay, further study was indicated to determine the amount of fluorine necessary to reduce caries, but not produce mottled enamel. Such studies have been made with the following conclusions; that dental caries could be reduced 65 per cent with only very mild fluorosis when the fluoride concentration did not exceed 1.5 parts per million (1.5 ppm.). Studies also revealed that to obtain the best results from fluoridated water, children must consume it during that period when the teeth are developing or from birth to about eight years of age.

These satisfactory conclusions having been reached, thoughts turned to the possibility of ways and means of providing some method by which fluorides may be made available to children everywhere and plans soon evolved for a series of experiments to determine whether fluorides added to the water supply artificially would prove as effective as naturally fluoridated water.

The first of such experiments was initiated in Grand Rapids, Michigan, in January, 1945. In May of the same year, another got under way in Newburgh, New York, and a third one was started at Sheboygan, Wisconsin in February of 1946. All are using a concentration of 1.0 ppm or slightly more.

While such experiments require from eight to ten years for completion, results thus far have been most gratifying. Grand Rapids reports that the caries experience of children five to seven years old is practically the same as that in children in the same age group in Aurora, Illinois, whose water supply contains much the same concentration of natural fluoride. In only five years of operation, reports indicate a caries reduction of 51.3 per cent among six-year-old children, 36.4 for nine-year-old children and 16.7 for those in the thirteen-year-old group, while Newburgh reports a 32.5 reduction in carious permanent teeth for children from six to twelve in four years.

Obviously fluoridation of public water supplies offers a partial solution to the tremendous problem which has confronted the dental profession for many years. Unable to provide adequate dental care for more than 35 per cent of the population, the problem has taken on new proportions with the shortage of dental personnel and increasing demands for service from a dental-conscious public.

The American Dental Association was one of the first organizations to adopt a resolution endorsing the fluoridation of public water supplies. This was done at their annual convention in the fall of 1950 and since that time the majority of its constituent societies have taken similar action.

Individual community groups while sharing the opinion of the dental profession have looked upon fluoridation from another angle — the cost of dental care for great masses of people as compared with the cost of fluoridation. Now convinced that no harmful effects will be encountered by human beings or industries when the recommended fluoride concentrations are maintained, numerous cities throughout the country have undertaken fluoridation. Stadt[6] in a study released in May, 1951, reports 176 cities in 33 states with fluoridation in progress or approved. Since approximately 15,400 public water supplies provide 94,000,000 people with potable water, he believes it is possible that during 1951-52 more than 30 per cent of these people may be receiving fluoride-bearing water. He includes the 4,000,000 people living in areas where the natural fluoride concentration is 0.90 ppm or more.

The fluoride content of the public water supplies of Delaware is less than one part per million. As of July, 1951 Newark was the only community which had begun fluoridating their supply. Actual application of the chemical began in February 1951. In an attempt to determine the results of this treatment, the Delaware State Board of Health plans to examine the teeth of a group of Newark school children at intervals over a period of years. The findings of these examinations will be compared with those of a comparable group of children in another Delaware community which does not fluoridate. Some interest in the treatment has developed in one or two other Delaware communities.

Accurate equipment must be used to add

fluoride to drinking water as the amount in the water must be kept between 1.0 and 1.3 parts per million. Competent personnel must be provided to operate the equipment and to frequently test the water. The fluoride does not affect the taste, odor, color or turbidity of a water supply. It is estimated that the treatment will cost from 6 to 18 cents per person per year.

Fluoridation has been approved by several national organizations. Among those recommending this treatment are: U. S. Public Health Service; American Dental Association; and the American Public Health Association. The American Water Works Association has adopted a policy stating that "In communities where a strong public demand has developed and the procedure has the full approval of the local medical and dental societies, the local and state health authorities and others responsible for the communal health, water departments or companies may properly participate in a program of fluoridation."

The Delaware State Board of Health will approve the fluoridation of a community supply if a written request is received from the town officials and the following conditions are complied with:

1. The Board must receive a written request for approval of fluoridation of the city supply in question.
2. The written approval of the local governmental officials, of the local Board of Health and of the local organizations such as the Medical and Dental Societies, must be submitted to the Board.
3. Duplicate copies of plans and specifications showing the equipment to be installed must be submitted. If these plans are satisfactory, a written approval of the Board will be issued. The installation of the fluoridation facilities must not begin until this written approval is secured.
4. The community must provide competent personnel for the operation and control of the fluoridation equipment and for testing the amount of fluoride in the water. A satisfactory testing device must be provided.
5. A sufficient number of tests of the fluoride content must be made to make certain that the equipment is operating satisfactorily. During the first week of operation of this equipment, the fluoride content should be checked at least twice daily and a permanent record of the results of this test must be maintained. After this initial period, the fluoride content should be checked at least once each day, and a permanent record maintained. One copy of this permanent record must be submitted to the Delaware State Board of Health at the end of each month. The fluoride content of the water should be maintained between 1.0 and 1.3 parts per million.

REFERENCES

1. American Dental Association: Fluoridation in the Prevention of Dental Caries, Feb. 1951.

2. Black, G. V., and McKay, F. S.: Mottled Teeth, Dental Cosmos, 58:129 (Feb.) 1916.

3. Bunting, R. W., Crowley, M., Hard, D. G., and Keller, M.: Further Studies of Relation of Bacillus Acidophilus to Dental Caries, Dental Cosmos 70:1002, 1928.

4. McKay, F. S.: Mottled Enamel. J. Dental Research 8:353, 1928.

5. Dean, H. T.: Endemic Flurosis and Its Relation to Dental Caries, Public Health Rep. 53:1443 (August 19) 1938.

6. Stadt, Zachary M., Charlotte, N. C. Advance Report, May 7, 1951.

THE PROGRAM OF THE DIVISION OF CRIPPLED CHILDREN'S SERVICES

JACK SABLOFF, M. D.,*
Dover, Del.

The State Board of Health is certain that every physician in Delaware is interested in knowing of the services it offers to the handicapped and crippled children of the state. With this thought in mind a brief outline of the program offered by the Division of Crippled Children's Services will be presented for the benefit of those physicians relatively new to the practice of medicine in Delaware and as a means of bringing the others up to date on expanded services.

GENERAL POLICY

The age limits for the program extend from birth through twenty-one years. Diagnostic services are available for all within these age limitations. Eligibility for treatment services, as distinguished from diagnostic services, is dependent upon the economic status of the family. Also, to be eligible for continued care a child must have or demonstrate upon a trial period sufficient mentality to benefit from treatment services.

---

*Director, Maternal and Child Health and Crippled Children's Services, Delaware State Board of Health.

STAFF AND TYPES OF SERVICES AVAILABLE

A general idea of the types of service available can be obtained from an enumeration of the staff. Crippled children's clinics are conducted by two part-time qualified orthopedists. The full-time professional staff, in addition to the director, consists of two physical therapists, one occupational therapist, three speech therapists, one of whom acts as the coordinator of the Speech and Hearing Program, two audiologists, and two medical social workers. All full time staff meet the recognized qualifications in their respective fields.

Put in terms of the types of services rendered, these can be listed as follows: orthopedic supervision and care, physical therapy, occupational therapy, speech therapy, audiological services, medical social services. There is also a close association with the Division of Public Health Nursing and close cooperation with the public health nurses of the county health units at Georgetown, Dover, and Newark and of the city of Wilmington. They provide nursing services at the clinics and home follow-up.

TYPES OF CONDITIONS ACCEPTED BY THE PROGRAM

The conditions accepted by the program are as follows:

All orthopedic conditions
Birth injuries
Cerebral palsy
Conditions requiring plastic surgery
(Example: cleft lip, cleft palate, contractures from burns)
Certain conditions requiring neurological study or neuro-surgery
(Example: hydrocephalus, spina-bifida)
Speech deviations
Hearing impairments
Severe dental malocclusions

The acute phase of poliomyelitis is not accepted but orthopedic consultation is made available upon request.

CRIPPLED CHILDREN'S CLINICS

Clinics are conducted once every six weeks at each of the following locations: Dover, Milford, Georgetown and Seaford. Orthopedic and related cases are cared for through these clinics. The clinics are attended by a brace maker and a shoe man, in addition to the orthopedic, nursing and social work staff. The clinical records from the central office in Dover are carried to clinic. Orthopedic shoes, braces, prostheses and other orthopedic appliances are furnished upon recommendation of the orthopedic consultants who conduct the clinics. X-rays as ordered by these orthopedic consultants are procured and their recommendations for physical therapy and occupational therapy are carried out by the appropriate technical members of the staff. Hospitalization is arranged in Delaware hospitals except for certain conditions, mainly neurosurgical in nature, which are referred to out-of-state hospitals, principally the University of Pennsylvania Hospital and Children's Hospital of Philadelphia.

THE ALFRED I. DUPONT INSTITUTE

A close relationship exists between the Alfred I. duPont Institute and the Division of Crippled Children's Services of the Delaware State Board of Health. The Institute conducts crippled children's clinics twice a week (Wednesdays and Fridays) and provides orthopedic services to the children residing in the Wilmington and New Castle County areas. The physical therapists, occupational therapist and a medical social worker of the Division of Crippled Children's Services are in attendance at these sessions. Clinic notes on those children who are receiving their medical supervision at the Alfred I. duPont Institute clinics are furnished to assist the State Board of Health staff in providing follow-up services. Occasionally cases are referred to the Institute clinics from the down-state clinics.

In addition to providing out-patient services for the orthopedically handicapped and those with related conditions, the Alfred I. duPont Institute provides hospitalization for these children up to the age of sixteen years. The types of patients admitted are those with disorders of the skeletal system such as infantile paralysis, congenital malformations, curvature of the spine, scar tissue contractures, etc., such as require the attention of the orthopedic and plastic surgeons. Children with mental disorders are not eligible for admission. Children from State Board of Health clinics who require hospitalization and who have conditions which are eligible for admission to the Institute are referred to that institution for such hospital care. There is no charge to the state nor to the family of the child. The education of the child is continued by qualified school teachers employed at the Institute. Medical summaries of the hospitalization are provided to the Division.

GOVERNOR BACON HEALTH CENTER

The Governor Bacon Health Center is under the administration of the Board of Trustees of the Delaware State Hospital. A unit for the hospitalization of crippled children is conducted at this institution. The State Board of Health cooperates with the Center in providing care for crippled children by furnishing the part-time services of various professional staff, including a qualified orthopedist, a physical therapist, an occupational therapist, a medical social worker, speech therapists, and an audiologist. The Division of Crippled Children's Services also assists the Center by providing braces, prostheses and other such appliances for the orthopedically handicapped children who are under its care. The Center furnishes interim notes and discharge summaries to the Division.

The Center is used for the hospitalization of cases of cerebral palsy (cerebral palsied children are not accepted at the Alfred I. duPont Institute) and for many of the longer term orthopedic disabilities. There is an interchange of information between the two agencies on cases at the Center or children under the care of the division who are to be hospitalized there. Staff members of the Division of Crippled Children's Services also attend case conferences on handicapped children at the Center.

In general, the type of cases referred to the Center are those with long-term disabilities who can profit from a therapeutic regime and are not purely custodial care problems.

SPECIAL CEREBRAL PALSY CLINICS

The Division of Crippled Children's Services engages Dr. Winthrop M. Phelps of Baltimore, to conduct special orthopedic clinics for cerebral palsied patients. The problem patients to be seen are selected by the clinic staff. These special clinics are usually held once yearly and sessions are held at the Governor Bacon Health Center, the Alfred I. duPont Institute, Dover, and Georgetown.

Doctor Harold Westlake, Director of the Speech and Hearing Clinic, Northwestern University, conducts special clinics related to speech problems of cerebral palsied children. In the past year the clinics conducted by Doctor Phelps and Doctor Westlake overlapped and some children were seen jointly by them.

SPEECH AND HEARING SERVICES

The speech and hearing program offers services to any child whose communication skills have not developed normally, whose speech deviates from the normal, or whose hearing is impaired. Diagnostic speech and hearing services are made available to all children up to the age limit of twenty-one. However, treatment services are limited to the preschool group with the following exceptions: (a) when speech and hearing problems exist with certain organic conditions such as cerebral palsy and cleft palate; b) hearing therapy initiated in the pre-school age is continued, when indicated, into the school age as an adjunctive service to regular school attendance.

The State Board of Health assisted materially in equipping the Audiology and Speech Center of the Delaware Hospital, Wilmington. The Audiology and Speech Center and E.N.T. clinic of the Delaware Hospital are used for both diagnostic and treatment purposes. The Speech and Hearing Clinic of the Johns Hopkins Hospital in Baltimore is used when psycho-galvanic skin-resistance equipment must be employed in hearing testing of very young children. It is anticipated that the Audiology and Speech Center of the Delaware Hospital will be capable of doing such testing in the relatively near future, thus obviating the necessity of sending children to Johns Hopkins.

The treatment services offered by the program consist of otological and audiological examination, audiological and speech training, surgery related io the speech and hearing problem, radium and x ray therapy, the furnishing of individual hearing aids.

ORTHODONTIA

This is a new program that is just being instituted. Its primary aim will be to accomplish speech rehabilitation in the cleft palate child, but other severe dental malocclusions will be given consideration. The program hopes to bring into close association the services of the plastic surgeon, the orthodontist and the speech therapist. Qualified orthodontists in the state of Delaware are participating. The program will afford pedodontic services to cleft palate children under orthodontic care when this cannot be afforded privately. The program will also furnish speech appliances as indicated to the cleft palate cases under care.

Cooperation with Other Official and Voluntary Agencies

The Division of Crippled Children's Services cooperates with other agencies, both official and voluntary, in furnishing or developing services for crippled children in the state. It refers children to many other agencies for auxiliary services which are not available through the Division itself. An example of official agency referral is the use of the Mental Hygiene Clinic for psychometric and psychological testing, and for mental hygiene services. An illustration of the manner in which the Division cooperates with voluntary agencies is demonstrated in the treatment services provided the School for the Handicapped in Wilmington sponsored by the Delaware Society for Crippled Children and Adults. Here the Division furnishes the part-time services of its speech therapists and a physical therapist who work under the direction of a supervising orthopedist or clinic. This brings treatment services into close association with the educational program of these children.

Conclusion

The program prefers early referrals so that minor defects can be treated and improved or cured before they become major in nature. Another of its aims is assistance to children requiring expensive, long-term, coordinated specialized services — such as one encounters, for example, in the treatment of the cerebral palsied and cleft palate child.

The program welcomes the referrals it receives from the physicians in Delaware. Physicians could assist us by sending mailed written referrals rather than verbally directing patients to clinic. By so doing, they would enable the staff to more carefully control clinic attendance, and more efficiently plan their work. Reports will be sent to the referring physician.

ONE PHASE OF CORRELATION BETWEEN PEDIATRICS AND THE SPEECH AND HEARING SERVICES

Marian L. Gilmore, M. A.,*
Dover, Del.

Speech and hearing services under the Crippled Children's Division of the State Board of Health were instituted in 1946 with a philosophy which emphasized prevention rather than correction and early referral rather than one which came too late. A re-evaluation of the program was in order in 1950 with Dr. William G. Hardy of the Hearing and Speech Center of Johns Hopkins Hospital as consultant. There emerged a decision to outline the program to the physicians of the state who see the largest number of pre-school children and to explain to them the necessity of early referrals. Since older children with speech and hearing problems appear to be in the greatest need because the therapy has been delayed or the family has not been concerned, the majority of referrals had been submitted for school-age children.

It is important that a child with cerebral palsy be seen by a speech therapist as early as twenty months if there is indication that he does not attempt speech. The therapist can begin work on the sucking and swallowing reflexes, on the tongue musculature and on the breathing mechanism much as the physical therapist works with other motor coordinations. The parents can play with him and talk to him in the same manner in which they do with any child of the same age in order to develop a readiness for speech.

A child with a cleft palate should be followed by the speech therapist from the eighteenth or twentieth month. The therapy will be coordinated with the work of the plastic surgeon and with the orthodontist and prosthetist if these treatment services are indicated.

If a child's speech is delayed for other than organic reasons beyond the third birthday, a referral to the Speech and Hearing Services is indicated. In many speech and hearing cases psychological evaluations are helpful, but they are particularly essential in this type of case.

If the child "stutters" between the ages of

---

*Coordinator of Speech and Hearing Services (in collaboration with Miss Ruth Blattspieler and Mrs. Vivian Steffgen), Delaware State Board of Health.

two and six, it may be part of normal speech development. When, however, the parent and/or the child is concerned, a referral should be made. Their reactions to this type of speech, however mild it may be, can produce real problems which are often preventable through discussions with a speech therapist. Much of this "stuttering" amounts to word repetitions. At an early age these are not usually considered actual stuttering because the child is merely passing through one stage of his speech development. These repetitions he outgrows. In other instances during the same period of development there are factors within the child's environment which will aggravate the word repetitions and produce real stuttering. Frequently one of these factors is an impatient parent who expects a higher level of performance in speech than the child is capable of giving at that time. Other factors produce an emotionally disturbed child whose stuttering is symptomatic. These children will probably need help in order to "outgrow" the stuttering. Some never will outgrow it, but may improve under therapy. Advising the parent to tell the child to "start over" or to "slow down" is no longer considered sound and can even be extremely harmful.

Speech deviations which are articulatory in nature have a varied etiology. Many of them, because of the strange substitutions of one sound for another, the omission of certain sounds or the distortion of others, would seem to be a perseveration of baby talk. Usually the parents feel that this must be eliminated before the child is admitted to school. If there is concern, a referral should be made, and if substitutions are numerous after the age of four, a referral is important. Most children speak without any sound substitutions by the age of seven.

As soon as there is the slightest question about a child's hearing, he should be referred to these services where steps will be taken to evaluate the loss and to take every advantage in his training of any residual hearing he may have. A parent may notice quite early that he is not responding to sound. The very young child can now be tested accurately by a device known as the Psychogalvanic Skin Resistance Test* which produces true results without voluntary response on the part of the child. The early training of these children is of maximum importance because not only the mechanism of speech is involved, but even more essential, language concepts must be established. Every child seen by the staff of these services is given a routine audiometric test.

Any physician can refer a child for a diagnostic speech interview by mailing one of the referral forms available through the Division of Crippled Children's Services, Delaware State Board of Health, Dover, Delaware. This form provides space for the following information: name of child, date of birth, address, phone number, names of parents, medical diagnosis, ability or inability to attend clinic, date of referral, comments and signature of physician.

Many physicians have asked for the title of a readable book for parents which discusses normal speech development and ways of helping a child to talk. Dr. Charles C. Van Riper has recently published "Teaching Your Child to Talk." This may be obtained by ordering through local book stores or by writing to Harper & Brothers, Publishers, New York City, New York. The price is two dollars.

It is interesting to note the change in the number of referrals from physicians to whom this program was explained a year ago.

Number of referrals from physicians from 1946 to Sept. 1950 ...... 20.

Number of referrals from physicians since Sept. 1950. ...... 72.

The staff of the Speech and Hearing Services has appreciated the understanding and support of the physicians in the state. It is their intent to serve in the best possible way and to the extent that their personnel will permit.

*Developed by Drs. John E. Bordley and William G. Hardy of Johns Hopkins Hospital.

KEEPING OCCUPATIONAL THERAPY FUNCTIONAL

Herbert C. Verry, B. S., O. T. R.,*
Dover, Del.

Many modalities employed by occupational therapists have become familiar to doctors prescribing this type of treatment, but often the greatest value is not being derived from occupational therapy due to misunderstandings as to how it can be applied functionally. Too frequently, occupational therapy is regarded and used as merely a diversional activity, and its functional value overlooked, or under-emphasized. What are some of its functional applications? Orthopedically, for example, occupational therapy can be employed to build up range of joint motion, muscle strength, develop coordination, motor skills and work tolerance. Psychiatrically, occupational therapy can be utilized to offer a suitable outlet for aggression, provide relief for deep seated guilt feelings and contact with reality.

Even with post rheumatic fever cardiacs, and tuberculosis cases, occupational therapy has a definite functional value if applied properly and wisely. It is frequently assumed by those treating this type of patient that occupational therapy can do nothing more than keep the patients busy and contented enough to stay in an institution. At the very best, they feel that the "crafts" given the patient will only serve as a later hobby interest. In reality, it is possible to grade the type of activity to such a degree that each patient be allowed to do only those things which are within his tolerance limit. These gradations should be clearly defined by the doctor prescribing the treatment and understood by the therapist and everyone else working with the patient to make it most valuable. Before treatment is prescribed, it might be more helpful to the doctor to ask the therapist to give a detailed breakdown of each activity available and suggestions as to gradations of the activity. In the case of working either with cardiac or tuberculosis patients, the occupational therapy time should be considered only in terms of its proper relationship to all other activity in which the patient participates during the day — not in terms of occupational therapy alone.

Functional occupational therapy in the treatment of cerebral palsy children has as its initial goal, self care — which includes feeding, toilet training, dressing and putting braces on and off. The age and physical involvement of the child determine in many cases whether the approach should be made directly with such equipment as large wooden shoes and button boards, or whether it is necessary to precede this with simple "play" activities in which conscious relaxation and motion from a relaxed position are primarily stressed. In either case, the therapy should be given individually to avoid outside distraction. Eventually, it is desirable to bring the child into a group situation that he might build up confidence and poise in working with others. At this stage, it is often possible to have the patient work on activities of a more complex nature such as weaving, knotting or netting which still employ the same general motions as were previously used but in an activity that stresses the ability rather than the inability of the patient.

Wherever and however occupational therapy is offered, it is desirable for the therapist to discuss with the physician exactly what treatment could be offered the patient. In some instances activities might have to be avoided since the equipment is not available. In the home treatment situation, the therapist would offer those activities which can be taught in relatively short time and for which equipment can be readily transported.

In conclusion let us remember that "Therapy means treatment, and occupational therapy is treatment by means of participation in occupations or activities devised to attack specific problems resulting from disease or injury." [1]

REFERENCE

1. Willard, Helen S. and Spackman, Clara S.: Principles of Occupational Theraphy. Philadelphia: J. B. Lippincott Co., 1947.

---

*Occupational Therapist, Delaware State Board of Health.

NUTRITION IN QUANTITY FOOD SERVICE

MARY T. DAVENPORT, M. S.,*
Dover, Del.

The State Board of Health offers consultant service in nutrition to the state's tax supported institutions which do not employ trained dietitians. Six institutions are visited regularly. This consultant service extends to a home for children and to the nursing homes within the state.

In these groups many of the people are elderly and healthy. Some are afflicted with terminal illnesses. Tuberculosis patients make up a share of this population. Boys and girls in industrial schools and a group of orphans complete the list.

Good nutrition cannot be achieved for these people just by serving three meals a day, well balanced and attractive as these meals may be. The physician in charge, the food service manager, all people involved in the food preparation and the dish washers must be aware of the tremendous effect the patient's or child's attitude may have upon his acceptance of food.

Some features that are marked for improvement are discussed below. These may respond by the cooperation of the above named personnel — the foundation for all work being to know the person who is fed as one of the group.

In feeding the aged one must recognize the loss of independent living as the patient joins a homogeneous group. The frustrations of old age can make adjustment difficult. Donohue states that, "Over-eating may reflect the emotional poverty of the older people whose days often contain so little of interest or value, that eating becomes the most important satisfaction and compensation of living.' "[1]

Respect for former food habits should be maintained wherever possible. Discussion of the food service with the patient is of inestimable value to everyone involved. Patronizing attitudes must be totally absent. Some groups are served 2 meals a day. This is to be discouraged. It is believed that greater assimilation of food, with less tax on the digestive system is the result of three to five light meals. When special diets are ordered, these should be discussed with the food service manager and the patient, if the health of the latter permits. In no case should undue importance be placed upon a special diet because of the tendency to produce unnecessary introspection. Occasional observation should be made to determine the adherence to special diets.

Lawrason Brown writes of the tuberculosis patient, "Contradiction contradicts contradiction and the tuberculosis patient is described as anything between an insane criminal and a saint too ethereal for this mundane sphere. You can pick your articles and take your choice of his character.'"[2]

From experience we all know that the tuberculosis patient is easily angered and easily pleased. It requires the limitless ability and patience of a food service manager to provide the food that is so necessary in the recovery from tuberculosis. This is especially difficult where patterns of eating vary widely due to nationality, family customs, severity of the illness and the emotional maturity of the patient. Here again, it appears that mutual understanding of the procedures by the physician, the patient and the food service manager is of vital importance if a normal rate of recovery is expected. A group study of food nutrients with little, if any, reference to specific meals served by the sanatorium could develop a more nearly mature attitude toward a variety of foods.

Many girls in punitive institutions gain excessive amounts of weight. Too much carbohydrate in the diet and inactivity can lead to the ingestion of calories far in excess of needs. Glandular disturbances may be responsible for a portion of the overweight cases. In any event, group or individual instruction by the physician or other qualified personnel and the supervision of menus, as served and eaten, can result in better health through improved food habits. Advantage should be taken of this opportunity to develop an acceptance of most foods prepared in a variety of forms. Irregular habits of elimination could be corrected during this period. Proper food and proper toilet habits may do much to develop good elimination. A knowledge of the importance of this should not be overlooked.

Boys are reluctant to change food habits. However, this reluctance appears to be compensated for by their not objecting to the repetition of food as long as the repetition does not approximate what would be termed monotony by the average person. At one institution, the medical staff has confirmed the writer's statement that a high degree of vitality and low incidence of illness are due, in part, to good nutrition.

---

*Nutrition Consultant, Delaware State Board of Health.

In conclusion, satisfactory institutional food service can be derived by the establishment of standards for the group being served, the recognition of the food habits of the individual prior to his admission, an understanding, by everyone involved, of the methods being used and making use of any learning opportunities that the food service may offer.

REFERENCES

1. Donahue, Wilma T.: Psychologic Aspects of Feeding the Aged J. Am. Dietet. Assn. 27: No. 6, June 1951.
2. Brown, Lawrason: The Mental Aspect in the Etiology and Treatment of Pulmonary Tuberculosis Internat. Clin., 3: 149, 1933.

MEDICAL SOCIETY OF DELAWARE

MONDAY, OCTOBER 8, 1951

Hotel duPont — Hunt Room

7:00 P. M.—Meeting of the Council

8:30 P. M.—Meeting of the House of Delegates

TUESDAY, OCTOBER 9, 1951

Hotel duPont — Gold Ball Room
General Meeting

9:30 A. M.—Invocation
Rev. William F. Dunkle, D.D.,
Pastor, Grace Methodist Church
Wilmington.

9:40 A. M.—Address of Welcome
Hon. James F. Hearn
Mayor of Wilmington.

10:00 A. M.—Report of House of Delegates
Andrew M. Gehret, M. D.,
Secretary, Med. Soc. of Del.

10:10 A. M.—The Nagamatsu Approach to the Kidney (Color Movie)
Brice S. Vallett, M. D., Wilmington
Urologist, Delaware Hospital.

10:20 A. M.—The Diagnosis and Treatment of Epilepsy
Douglas T. Davidson, Jr., M. D., Boston
Assistant in Pediatrics, Harvard University.

Epilepsy is a disorder of many causes and almost infinite variation. Its diagnosis is based on evaluation of data obtained from history, physical examination and laboratory. Treatment by anti-epileptic drugs is today successful in the great majority of patients. Psychotherapy for the patient is as essential a part of his management as drug therapy.

Discussion: Drs. A. L. Ingram, Jr. and M. A. Tarumianz.

11:00 A. M—Visit the Exhibits

11:30 A. M.—Craniocerebral Trauma
Richard G. Coblentz, M. D., Balto.
Clinical Professor of Neurological Surgery, University of Maryland.

It is important that the general practitioner and especially the general surgeon be thoroughly familiar with the broad general principles upon which modern treatment of head trauma is based. A cursory review of the pertinent anatomic, physiologic and pathologic data. A classification of head injuries. Symptomatology, diagnosis, treatment-operative, non-operative, important sequelae.

Discussion: Drs. P. J. Gordy and D. J. Preston.

12:10 P. M.—Announcements

12:15 P. M.—Adjournment — Exhibits

12:30 P. M.—Luncheon
Hunt, Alchemist, Wedgewood, and Garden Rooms
Members and Guests.
Guests of the Medical Society of Delaware.

2:00 P. M.—Certain Aspects of Surgery of the Newborn
C. Everett Koop, M. D., Phila.
Surgeon-in-Chief, Children's Hospital.

Of the congenital anomalies incompatible with life but amenable to surgical correction, atresia of the esophagus and imperforate anus deserve special consideration. Early diagnosis and transthoracic repair of esophageal atresia should salvage many infants. The proper selection of an operative procedure for imperforate anus should be aimed not only at saving a life but providing normal bowel function.

Discussion: Drs. R. O. Y. Warren and H. H. Stroud.

2:40 P. M.—What Are The Therapeutic Goals for Nephrotic Patients?
Lee E. Farr, M. D., Upton, L. I.,
Chairman, Medical Dept., Brookhaven National Laboratory.

The various recent advances in treatment available for patients with the nephrotic syndrome do not all provide measures of equal importance in therapy. It is necessary to decide what immediate therapeutic objective is most important and then one by one bring the various aspects of the disease under control. Criteria for therapeutic performance will be discussed.

Discussion: Drs. R. W. Frelick, E. F. Fantazier, and L. B. Flinn.

3:30 P. M.—**Visit the Exhibits**

3:50 P. M.—The Treatment of Peripheral Vascular Disease

Hugh Montgomery, M. D., Phila.,
Chief, Peripheral Vascular Section, University Hospital.

Discussion limited to treatment of peripheral vascular diseases, organic and vasospastic, in which ischaemia plays the most important role. Discussion of two principles underlying the treatment of ischaemic diseases of extremities; measures that decrease need for blood flow, and measures that increase the flow of blood to the ischaemic part.

Discussion: Drs. C. L. Munson and R. M. Murray.

4:30 P. M.—The Office Management of Diabetes Mellitus

Perry S. MacNeal, M. D., Phila.,
Physician, Pennsylvania Hospital and Benjamin Franklin Clinic.

A brief and practical discussion of the dietary and insulin therapy of diabetes mellitus as applied to office patients. A discussion of application of the different type of insulin will also be included.

Discussion: Drs. R. L. Dewees and L. B. Flinn.

5:10 P. M.—Announcements

5:15 P. M.—Adjournment — Exhibits

2:00 P. M.—5:00 P. M.—Chest X-rays of Members and Auxiliary
Courtesy of State Board of Health, Mobile X-ray Unit.

6:45 P. M.—Reception — Georgian Room

7:30 P. M.—Annual Dinner — duBarry Room

Members and Auxiliary are invited to subscribe. Tickets from Dr. John W. Barnhart,

1303 N. Franklin St., Wilmington.

Dress: Optional

Address: Problems Confronting the Medical Profession in the Immediate Future

John W. Cline, M. D., San Francisco
President, American Medical Asso.

WEDNESDAY, OCTOBER 10, 1951

Hotel duPont — Gold Ball Room
General Meeting

9:00 A. M.—Chemicals and Health

John H. Foulger, M. D., Wilmington
Director, Haskell Laboratory of Industrial Toxicology.

Increasing use of synthetic chemicals in all phases of daily life is causing apprehension about possible new health hazards. Is there serious risk of harm from "smog" in our cities? Is there serious risk of harm in the use of chemicals and chemical products in preparation and protection of our food, or in household tasks? If risk exists, where does it lie and how can it be prevented?

Discussion: Dr. D. H. Aitken and J. W. Howard.

9:40 A. M.—Industry's Challenge to Medicine

R. Ralph Bresler, M. D., Phila.
Associate in Public Health and Preventive Medicine (Industrial), Hahnemann Medical College.

The role of the industrial physician has long been misunderstood by the rest of the profession. Industry makes many unusual demands of the industrial physician, demands that the average physician is unable or unwilling to fulfill. The medical profession must realize and accept fully the responsibilities placed upon it by industry.

Discussion: Drs. L. C. McGee and A. J. Fleming.

10:20 A. M.—The Gynecologic Care of Post-Menopausal Patients

Franklin L. Payne, M. D., Phila.
Professor of Obstetrics and Gynecology, University of Pennsylvania.

The post-menopausal era is defined. The difference between this and the earlier eras, as to the character of hazards and symptoms, is pointed out. The physician's gynecological care, consisting of three functions: the relief of unpleasant constitutional symptoms, the treatment of local benign developments, and the early detection of genital malignancy is detailed. Since 60% of the genital malignancies are post-menopausal, this aspect of gynecological care is emphasized.

Discussion: Drs. S. W. Rennie and A. H. Seegar.

11:00 A. M.—**Visit the Exhibits**

11:30 A. M.—Impressions After 33 Years in Medical Practice

Charles E. Wagner, M. D., Wilm.
President, Medical Society of Delaware.

12:10 P. M.—Election of President-elect for 1952 (New Castle)

12:15 P. M.—Announcements

12:20 P. M.—Adjournment — Exhibits

12:30 P. M.—Luncheon

Hunt, Alchemist, Wedgewood, and Garden Rooms

Members, Guests, and Auxiliary Guests of the New Castle County Medical Society.

2:00 P. M.—The Role of The General Practitioner in Counselling Before and After Marriage

O. Spurgeon English, M. D., Phila.

Professor of Psychiatry, Temple University.

A happy, well-functioning marriage is a positive psychotherapeutic agent for all members of the family. The general practitioner can help to establish and to maintain such a marriage. The demand for counselling grows greater and the general practitioner should have a technique for it as he does for other procedures. A good reading list can help in the counselling process.

Discussion: Drs. Verna Stevens-Young and H. T. McGuire.

2:40 P. M.—Potential Dangers from Incomplete Examination of the Pregnant Woman

J. Robert Willson, M. D., Phila.

Head, Department of Obstetrics and Gynecology, Temple University.

Complete systemic and obstetric history and physical examination may aid in detecting asymptomatic abnormalities which if unrecognized may increase either fetal or maternal mortality. Such conditions include cardiac disease, pulmonary tuberculosis, essential hypertension, syphilis, diabetes, nephritis, contracted pelvis, and pelvic neoplasms. If such lesions are detected early in pregnancy and are adequately treated the prognosis usually is favorable.

Discussion: Drs. G. H. H. Garrison and O. N. Stern.

3:20 P. M.—Visit the Exhibits

3:50 P. M.—Retrolental Fibroplasia

P. Robb McDonald, M. D., Phila.

Attending Surgeon, Wills Hospital.

This syndrome was first described by Terry in 1942. It is the greatest cause of blindness in the preschool child today. The highest incidence of the disease occurs in premature infants, especially those weighing less than 3 pounds at birth. The etiology of the condition is as yet unknown. Recent studies have shown that the disease primarily involves the retina. No specific therapy is known, though some workers feel that ACTH may be of value in the acute stage.

Discussion: Drs. W. O. LaMotte, Jr. and R. O. Y. Warren.

4:30 P. M.—Methods and Results in the Surgical Management of Intractable Achalasia

Herbert R. Hawthorne, M. D., and H. Clinton Davis, M. D., Phila.

Professor of Surgery and Associate in Surgery, respectively, University of Pennsylvania Graduate School of Medicine.

The various methods and results of surgical treatment for intractable esophageal achalasia will be discussed, including a personal evaluation of a long series of cases managed either by esophagogastrostomy or by esophagcardiomyotomy.

Discussion: Drs. H. S. Rafal and W. M. Pierson.

5:10 P. M.—Acknowledgments

5:15 P. M.—Adjournment

IN MEMORIAM

R. Raymond Tybout, Wilmington
January 29, 1951

Robert W. Tomlinson, Wilkes-Barre
March 1, 1951

I. Wallace Mayerberg, Wilmington
May 2, 1951

Gerald L. Dougherty, Wilmington
August 9, 1951

Bartholomew M. Allen, Wilmington
September 7, 1951

WOMEN'S AUXILIARY
to the
MEDICAL SOCIETY OF DELAWARE
TUESDAY, OCTOBER 9, 1951

President, Mrs. Douglas M. Gay, Hockessin.
President-elect, Mrs. S. W. Rennie, Wilm.
Recording Sec'y, Mrs. A. M. Gehret, Wilm.
Corresp. Sec'y, Mrs. E. T. O'Donnell, Wilm.
Treasurer, Mrs. L. L. Fitchett, Milford

Delaware Academy of Medicine

10:00 A. M—Registration

10:30 A. M.—BUSINESS MEETING

Mrs. Douglas M. Gay, Presiding.

1. Invocation
2. Introductions, Mrs. Gay.
3. Roll Call of Delegates, Mrs. Gehret.
4. Minutes, Mrs. Gehret.
5. Reports of County Presidents.
6. Reports of Committee Chairmen.
7. Report of Nominating Committee.

12:00 Noon—ADJOURNMENT.

DUPONT COUNTRY CLUB

12:30 P. M.—LUNCHEON

Guest Speakers:

Charles E. Wagner, M. D., Wilmington, President, Medical Society of Delaware.

Roger Murray, M. D., Wilmington, Chairman, Advisory Committee, Woman's Auxiliary, M. S. of D.

Mr. E. Gillet Ketchum, Philadelphia, Supervisor, Re-education Clinic, Pennsylvania Hospital.

Adjournment. Afternoon—Free.

HOTEL DUPONT

2:00-5:00 P. M.—CHEST XRAYS OF MEMBERS AND AUXILIARY

Courtesy of State Board of Health, Mobile Xray Unit.

HOTEL DUPONT

6:45 P. M.—RECEPTION—GEORGIAN ROOM

7:30 P. M.—ANNUAL DINNER—DUBARRY ROOM

Members and Auxiliary are invited to subscribe. Tickets from Dr. John W. Barnhart, 1303 N. Franklin Street, Wilmington.

DRESS: Optional

Address: PROBLEMS CONFRONTING THE MEDICAL PROFESSION IN THE IMMEDIATE FUTURE.

John W. Cline, M. D., San Francisco

President, American Medical Association

WEDNESDAY, OCTOBER 10, 1951

DELAWARE ACADEMY OF MEDICINE

10:30 A. M.—GENERAL SESSION

Mrs. Douglas M. Gay, Presiding

1. Minutes, Mrs. Gehret.
2. Reports of Standing Committees.
3. Unfinished Business.
4. New Business.
5. Installation of Officers, 1951-1952
6. Inaugural Address—
   Mrs. Sylvester W. Rennie.
7. Adjournment.

12:30 P. M.—LUNCHEON—HOTEL DUPONT

Hunt, Alchemist, Wedgewood, and Garden Rooms

Members, Guests, and Auxiliary

Guests of the New Castle County Medical Society

TECHNICAL EXHIBITS

Booths Nos. 1-2

PEPSI-COLA BOTTLING CO.
Market and A. Streets
Wilmington, Delaware

Refreshments

Booth No. 3

CHARLES LENTZ & SONS
33 South 17th Street
Philadelphia 3, Pennsylvania

Instruments

Booth No. 4

AMERICAN RED CROSS-DELAWARE CHAPTER
911 Delaware Avenue
Wilmington, Delaware

Health Education—Disaster Relief

Booth No. 5

DEPUY MANUFACTURING CO., INC.
407-411 West Market Street
Warsaw, Indiana

Fracture Appliances

Booth No. 6

GOV. BACON HEALTH CENTER
Delaware City, Del.

Information

Booth No. 7

W. B. SAUNDERS COMPANY
West Washington Square
Philadelphia, Pa.

Medical Books

Booth No. 8

DELAWARE LEAGUE FOR PLANNED PARENTHOOD, INC.
110 E. 16th Street
Wilmington, Delaware

Information

Booth No. 9
Endo Products, Inc.
8440 - 101 Street
Richmond Hill, New York
Pharmaceuticals

Booth No. 10
George P. Pilling & Son Co.
3451 Walnut Street
Philadelphia 4, Pennsylvania
Instruments

Booth No. 11
Parke, Davis & Company
Joseph Campau Ave. at the River
Destroit 12, Michigan
Pharmaceuticals

Booth No. 12
Schering Corporation
2 Broad Street
Bloomfield, New Jersey
Pharmaceuticals

Booth No. 13
Ames Company, Inc.
P. L. Trauton, Asst. Sales Mgr.
Elkhart, Indiana
Diagnostic Chemicals

Booth No. 14
Sandoz Pharmaceuticals
68-72 Charlton Street
New York 14, New York
Pharmaceuticals

Booth No. 15
Doho Chemical Corporation
100 Varick Street
New York, New York
Pharmaceuticals

Booth No. 16
Ayerst, McKenna & Harrison Ltd.
22 E. 40th Street
New York 16, New York
Pharmaceuticals

Booths Nos. 17-18
John G. Merkel & Sons
1208 King Street
Wilmington, Delaware
Physician Supplies

Booth No. 19
United States Vitamin Corporation
250 E. 43rd Street
New York, New York
Pharmaceuticals

Booth No. 20
Burroughs Wellcome & Co., Inc.
H. F. Alexander, Exh. Mgr.
Tuckahoe 7, New York
Pharmaceuticals

Booth No. 21
E. R. Squibb & Sons
32-14 Northern Boulevard
Long Island City, 1, N. Y.
Pharmaceuticals

Booth No. 22
Denver Chemical Manufacturing Co.
163 Varick Street
New York, New York
Diagnostic Chemicals

Booth No. 23
G. D. Searle & Co.
P. O. Box 5110
Chicago 80, Illinois
Pharmaceuticals

Booth No. 24
Eli Lilly and Company
Indianapolis 6, Indiana
Pharmaceuticals

Booth No. 25
Paravox Hearing Aid
630 Commercial Trust Bldg.
Philadelphia, Pennsylvania
Hearing Aids

Booth No. 26
Sound Scriber Company
825 Market Street
Wilmington, Delaware
Dictation Recording

Booth No. 27
Mead, Johnson & Company
H. C. Hallum, Asst. Sales Mgr.
Evansville 21, Indiana
Pharmaceuticals

Booth No. 28
Acousticon-Neumeyer Co.
832 Market Street
Wilmington, Delaware
Hearing Aids

Booths Nos. 29-30
George D. Hanby Co.
919 Market Street
Wilmington, Delaware
Furniture

Booth No. 31

P. B. Rawley
177 Fairview Avenue
Rutherford, New Jersey
Hearing Aids

Booth No. 32

Philip Morris & Co., Ltd.
100 Park Avenue
New York 17, New York
Cigarettes

Booth No. 33

Delaware Anti-Tuberculosis Society
Buckner Bldg. - 1308 Delaware Ave.
Wilmington, Delaware
X-rays of Patients

Booth No. 33

Delaware State Board of Health
Dover
Delaware
X-rays of Patients

P-G Study For The G. P.

Postgraduate study primarily designed for the general practitioner will be the theme of the 1951 Clinical Session of the American Medical Association to be held in Los Angeles, December 4 through 7.

"Therapy will be stressed in a broad presentation of clinical studies on problems the general practitioner meets in daily practice," Dr. George F. Lull of Chicago, secretary and general manager of the A. M. A., stated. "Subjects of interest to the specialist will also be presented."

The scientific program will include presentations on urology; general practice; general surgery; cardiovascular diseases; industrial medicine and surgery; eye, ear, nose and throat diseases; diseases of the chest; neuropsychiatry; medical banks; radiology; anesthesia; pathology; traumatology as related to civil defense; obstetrics and gynecology; dermatology; internal medicine; and pediatrics.

"In addition," Dr. Lull added, "practical clinical discussions, scientific exhibits and general lectures on basic problems are planned."

Color television to demonstrate surgery, clinical treatment and examination procedure will be one of the highlights of the convention, according to Thomas G. Hull, Ph.D., Chicago, director of the scientific exhibit, who added: "The scientific exhibits will include those on cancer, diabetes, heart disease, obstetrics and gynecology, pediatrics, internal medicine, surgery, dermatology, and others of interest."

Registrants will be afforded the opportunity of spending many pleasant and profitable hours examining the latest in medical books; instruments and apparatus; infant special purpose, and general foods; achievements of pharmaceutical manufacturers, and miscellaneous commodities useful in everyday practice.

"Physicians may solve many troublesome problems by conferring personally with the qualified men and women in attendance at the technical exhibits," said Thomas R. Gardiner of Chicago, director of the technical exhibits.

Both the scientific and technical exhibits will be located in the Shrine Convention Hall, adjacent to the Al Malaikah Temple, where the lectures, clinical presentations, television reception and motion picture showings will take place. Approximately 2,100 lineal feet of space will be used for exhibits, with about 165 firms having technical displays.

In addition to the activities planned for the physicians attending the session, special interesting and diversified activities have been planned for wives accompanying their husbands.

More than 2,000 hotel rooms have been reserved for attending physicians planning to attend the session. Doctors, however, are urged to make their hotel reservations in advance by writing to Chairman, A. M. A. Subcommittee on Hotels, 1151 South Broadway, Los Angeles 15, California.

Editorials

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building

Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place

M. A. Tarumianz, M. D. ....Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 23 September, 1951 No. 9

Doctor's and High Taxes

Doctor, why are your Federal taxes mighty high now and going even higher soon? The answer is: for many reasons, one of which is the utter lack of brakes on non-essential Federal spending. As an example we cite the following editorial from the *Baltimore Sun* of September 1, 1951:

Which Comes First, Military Aid Or Hobby Books?

General Eisenhower recently informed a group of senators that the "future of civilization" is at stake in the rearmament of Europe through the mutual-aid program. Concerned by congressional delay over the mutual-aid appropriations and the efforts to cut them drastically, he added:

> The one thing that can break the United States and give us nothing in return is to drag this thing out.

General Eisenhower's advice on military matters is by common consent good advice. Despite that fact, the economy-isolationist bloc in the Senate has now succeeded in pushing through a substantial cut in military-aid appropriations. It has served notice of an intention to go further and try to make another cut in the economic-aid appropriation as well—though it is undeniable that economic aid is inextricably linked with military aid. There can be no such thing as a nation that is militarily strong but economically shaky.

The day after the military-aid program was cut, there appeared on this desk a small Government publication. It is entitled "New Horizons in Your Hobby Through These Useful and Entertaining Government Publications on Hobbies." This circular advertises a large variety of hobby publications, written and published at the taxpayers' expense and to be had from the superintendent of Documents at nominal cost. There are manuals on photography. There is a booklet entitled "Useful And Ornamental Gourds." We find here publications on gardenia culture, the operation of small boats, the raising of orchids, and on the repair of wrist watches, pocket watches, stop watches and clocks. There are how-to-do-it books on building bird houses, making articles out of leather, goose-raising, and the construction of fireplaces.

Why do we drag this into an editorial concerned with appropriations for military and economic aid to our allies?

We drag it in because it illustrates so aptly the tragic error of the isolationist-economy group in the Senate. They are keen for economy—as who isn't? So what do they pick on? They pick on a program which involves the very security of our country, a program which is absolutely essential to our success in the world struggle. They pick on this at a time when Federal spending on purely domestic matters, matters having only the remotest relation to the nation's security, **is at** *the highest point in history.* Senator Byrd, whose devolution to economy is famous, is responsible for the assertion that no less than $5,000,000,000 could be cut from that part of the budget concerned with domestic matters without serious danger or the loss of any really essential Federal services. But has the $5,000,000,000 been cut? It has not.

We hasten to say that there is nothing scandalous about the publication and advertising of these hobby manuals. They are, as the circular points out, byproducts of other governmental work; and

> in normal times, when the taxpayer is under no great pressure, the notion of making them available to hobbyists is a pleasant one. But at a time when, as General Eisenhower has said, the future of civilization is at stake, must hobby books continue to be printed even while we cut down on military aid for our allies? Must the Government keept right on producing new and revised treatises on gardenia culture and furniture repair?
>
> The economy bloc is barking up the wrong tree. The place to stint is not in military aid but in the array of Federal programs which are not essential to our security.

Regardless of your opinions on ECA, the Marshall Plan, the North Atlantic Pact, etc., we doctors surely agree en masse that the frivolities must stop—and soon. How about telling your feeling on this most important matter to your representatives in the Congress? Regardless of political affiliations, they are all interested in sound government financing.

Program For 1951 Session

This issue contains the official program for the 162nd Annual Session of the Medical Society of Delaware. The program is more complete at this early date than it has been for several years. The list of exhibitors with descriptions of their exhibits is also complete, and represents the largest exhibit we have ever held.

Notice of the Annual Session has been printed on the front cover of The Journal in the July, August, and September issues, so no one can plead ignorance of the exact dates. We hope for a full and actively participating attendance. Let's go!

State Board of Health Number

Once more, for the twenty-second year, this issue of The Journal presents the activities of the Delaware State Board of Health. This feature is one not emulated by many of the other state medical journals, but we find it profitable to publish it because we believe it benefits the department, the profession, and the public. This year it contains more articles than heretofore, several of them of unusual interest and value.

The Journal is happy to extend to Dr. Floyd I. Hudson, the Executive Secretary of the Board, and to all of his collaborators, its thanks for the excellent material which they have contributed.

To Magnify Faint Murmurs

A new method to facilitate the detection of heart murmurs, employing the vasoconstrictor neo-synephrine, Winthrop-Stearns, is reported by Dr. E. M. M. Besterman, a specialist in rheumatic fever, in a recent issue (August, 4725:205) of the *British Medical Journal.*

The method promises speedier diagnosis of damage to heart values resulting from rheumatic fever. According to Dr. Besterman, injection of neo-synephrine simultaneously slows the heart rate and increases the flow of blood and stroke volume, thus accentuating the murmur.

Early recognition of heart valve damage is extremely important. Murmurs are often the only evidence of such damage; but in the early stage of damage, they are inaudible or faint and apt to go undetected.

Dr. Besterman used the new method on 64 patients, 35 of whom were known to have rheumatic carditis and 19 of whom had rheumatic fever with no known symptoms of heart damage. Almost all of the patients were children.

Murmurs were successfully magnified in a vast majority of cases of heart damage, and 9 patients in whom no murmurs had been detected previously were found to have murmurs. In every one of the 29 patients without heart damage, the heart sounds were intensified but no murmurs were detected. In all cases any difficulty in distinguishing between normal heart sounds and murmurs was resolved.

In a group of 15 patients, murmurs had been heard but had disappeared two weeks before the tests with neo-synephrine. Murmurs reappeared in most cases in the tests. Dr. Besterman pointed out that it is important to give the neo-synephrine injections within four to five weeks in such cases of disappearing murmurs, in order to bring them out again for accurate diagnosis of damage to heart valves.

Neo-synephrine produced rapid results. Murmurs made audible by use of the preparation usually appeared within three minutes after injection and persisted for 15 to 25 minutes. Thirty patients received two or more injections, the others just one.

Cardiovascular Seminar

A seminar on cardiovascular disease will be held at the V. A. Hospital, Wilmington, on the first Monday of each month at 2:00 p.m. in Room 1044 (just inside the ambulance entrance). All physicians are cordially invited. A tentative program will be posted in local hospitals prior to each session.

Wr. William A. Jeffers, of the University of Pennsylvania, and Consultant in Cardiovascular Disease to the V. A. Hospital, will be a regular member of the panel. The guest for September will be Dr. Martin H. Wendkos, also of the University of Pennsylvania. Dr. A. Henry Claggett, Chief of Medicine and Cardiologist of the V. A. Hospital, will act as moderator.

All interested physicians are not only invited to attend but will be urged to enter actively into the discussion.

Bartholomew M. Allen, M. D.

Dr. B. M. Allen of 11 Manor Avenue, Claymont, chief of the department of radiology of the Memorial Hospital and president of the Delaware Academy of Medicine, died on September 7, 1951 at his home following a heart attack.

Dr. Allen, a former president of the staff of the Memorial Hospital and director of its radiology department for 24 years, had been ill of a heart condition since December of last year, but his sudden death was unexpected. He was 63 years of age.

Dr. Allen maintained his medical offices at 909 Washington Street. He was a past president of the New Castle County Medical Society, past president of the Philadelphia Roentgen Ray Society and at the time of his death was consultant radiologist for the DuPont Company.

Dr. Allen was born in Seaford on March 29, 1888, a son of Wilbert and Anne Adams Allen.

He attended the Seaford High School and the University of Pennsylvania and was graduated from the Medical School of the University of Pennsylvania with a medical degree in 1915.

Following his graduation Dr. Allen served for two years in the Army Medical Corps in World War I, one of them in France.

On his return from the Army service he started general practice at New Castle in 1919, and remained there for three years and then moved his office to Wilmington.

After he moved to Wilmington he studied radiology under the late Dr. David Bowen, radiological authority, at the Graduate Hospital of the University of Pennsylvania at nights.

Beginning in 1925 Dr. Allen devoted full time to radiology. He joined the staff of the Memorial Hospital two years later.

In addition to the societies in which he held office Dr. Allen was a member of the American Medical Association, a fellow of the American College of Physicians, fellow of the American College of Radiology, a councilman for the Radiological Society of North America, and a member of the Kiwanis Club, Oriental Lodge, No. 21, A. F. & A. M., Delaware Post, No. 1, American Legion, and the Episcopal Church.

In addition to his wife, Mrs. Anna Weaver Allen, Mr. Allen is survived by two sons, Olin S. Allen II, Wilmington and George B. Allen, Manchester, Conn.; a daughter, Mrs. Jane Allen Weaver, Wilmington; a granddaughter, Betsy M. Allen, Manchester, and two brothers, Dr. Olin S. Allen, Swarthmore, Pa., and Howard W. Allen, Seaford.

Services were held at the P. E. Cathedral Church of St. John, September 10, 1951, Dean J. Brooke Mosley officiating, assisted by Rev. Charles A. Rantz, of Claymont. The body now lies in a crypt at the Wilmington-Brandywine Cemetery.

BOOK REVIEWS

American Illustrated Medical Dictionary by W. A. Newman Dorland, M.D., Lieut.-Colonel, M.R.C., U. S. Army; Former Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association. 22nd Edition. Pp. 1736, with 720 illustrations, including 48 plates. Fabricoid. Price $10.00. Philadelphia: W. B. Saunders Company, 1951.

The new 22nd edition of Dorland is perhaps the most complete in the English language, more than 2,000 new words having been added to this edition, until it now contains 132,000 definitions. New features include an article on Fundamentals of Medical Etymology and a Table of Modern Drugs and Dosages. The type is clearer than in previous editions, and the paper slightly better. We have not yet gotten use to having the thumb indices coupled, but give us time. In our usage up to now we have noted only three words that we wanted defined that were missing. We still like Dorland better than any of the dictionaries that we use.

Progress Volume. By Harold Thomas Hyman, M.D. Pp. 734. Cloth. Price, $10.00. Philadelphia: W. B. Saunders Company, 1950.

Hyman's New Program Volume constitutes Volume 5 of his excellent Integrated Practice of Medicine, which we reviewed in 1947. This book contains an appraisal of the latest in developments in therapeutics, and fusion with the original set has been accomplished by continued adherence to the concepts of the original volumes by numerous page references interplated in the text and by inclusion of indices to illustrations, differential diagnosis, and symptoms, and the general subject index to Volumes 1 to 4. This book concludes with a separate index to the Program Volume on green tinted paper. Cumulatively, these indices provide complete access to text, charts, and illustrations of all five volumes.

This volume is indispensable to the owners of the original four volumes.

Santa Claus, M. D. By W. W. Bauer, M.D., Director of the Bureau of Health Education, American Medical Association. Pp. 266. Cloth. Price $2.75. Indianapolis and New York: Bobbs-Merrill Company, 1950.

Bauer writes for the laymen a book that debunks the socialists' propaganda, their ideas, and their statistics. He reiterates that the American Way is the best way and has led to the highest health standards in the world. As an instance of this, he states that "Swedes live longer in Minnesota than they do in Sweden." He discusses the 12-point program of the A.M.A. and at one place or another gives all of the answers to all of the questions that can be raised by proponents of compulsory health insurance.

The book makes excellent reading for physicians and for laymen, especially for those in both groups who lean towards statism in medicine.

The Other Side of the Bottle. By Dwight Anderson, former Director of Public Relations and Executive Secretary of the Medical Society of the State of New York. Pp. 258. Cloth. Price, $3.00, New York: A. A. Wyn, Inc., 1950.

Anderson's book is the fruit of many years of study of the problems of alcoholics, in which he analyzes both the physical and psychological treatments that offer new hope against the background of his own struggle with a seemingly incurable form of the disease. Anderson's experiences are revivified in a most interesting manner in this volume. He is a member of the board of directors of the National Committee on Alcholism, and has been a frequent contributor to the Quarterly Journal of Studies on Alcoholism, published by Yale University. This book should prove of unusual interest and value to every person facing the problem of alcoholism.

Surgical Forum—Proceedings of the Forum Sessions; 36th Clinical Congress of the American College of Surgeons, Boston, October, 1950. Surgical Forum Committee, Owen H. Wangensteen, M.D., Minneapolis, Chairman. Pp. 665, figs. 260, 6 tables. Cloth. Price, $10.00. Philadelphia: W. B. Saunders Company, 1951.

This volume is the first of a proposed series by the American College of Surgeons and its essence is summarized by Dr. O. H. Wangensteen in his introduction: "The Surgical Forum was born out of the great need for young men, engaged in research on surgical problems, to have an opportunity to bring their work before an audience of surgeons."

The contents is a compilation of the papers presented before the October, 1950 meeting in Boston. The volume covers an unusually wide field of subjects and should be of major assistance to those surgeons who have allowed themselves to become a bit rusty in some of the many up-to-date doings in the surgical field. It is not meant for the seasoned specialist, but should be in every worth while surgical library.

Eyes And Industry. (Formerly Industrial Ophthalmology). By Hedwig S. Kuhn, M.D., Industrial Ophthalmologist, Hammond, Indiana. 2nd edition. Pp. 378, with 151 illustrations. Cloth. Price, $8.50. St. Louis: C. V. Mosby Company, 1950.

Dr. Kuhn for many years has led research in the field of industrial ophthalmology. She has adopted the principle that to produce one must see effectively, and to avoid waste one must see effectively, and that to do this one must guard the eyes by physical protective devices whenever and wherever indicated. Finding the answers to this principle involved considerable research on actual patients. This book reports the conclusions she has reached from such research, and is the only book in which many important items on this subject can be found. An excellent bibliography concludes each chapter.

This book should be of more than usual importance to physicians and oculists who are in contact at all with cases arising from industrial plants.

Researches in Binocular Vision. By Kenneth N. Ogle, Ph.D., Section on Biophysics and Biophysical Research; Research Consultant in the Section on Ophthalmology, Mayo Foundation and Mayo Clinic, Rochester, Minnesota. Pp. 345, with 182 figures and 26 tables. Cloth. Price, $7.50. Philadelphia: W. B. Saunders Company, 1950.

Ogle's book summarizes the advances in physiologic optics and the application of that research to clinical ophthalmology and to visual science in general for the last twenty-five years, including the 18 years of researches conducted at the famous Dartmouth Eye Institute at Hanover, New Hampshire. The book does not attempt to be a comprehensive text in binocular vision, but rather it originates and integrates particular researches that have been published in a number of different and somewhat unrelated journals. As the authoritative source of basic truths so far discovered in this field, every ophthalmologist will want this book. Every general practitioner who attempts to test eyes in his office should either have it or have it available in his local medical library.

Thoracic Surgery. By Richard H. Sweet, M.D., Associate Clinical Professor of Surgery, Harvard University. Illustrations by Jorge Rodriguez Arroyo, M. D., Assistant in Surgical Therapeutics, University of Mexico. Pp. 345, with 155 illustrations. Cloth. Price, $10.00. Philadelphia and London: W. B. Saunders Company, 1950.

Sweet's book is the latest in a new and rapidly expanding field of special surgery, and one in which not many worthwhile texts are available. The work does not aim to be encyclopedic, and there are gaps here and there that will require filling from other sources. The book contains the usual chapters on anatomy and general technical considerations, and then describes the current operations about which there is general agreement: controversial issues are not included.

While even the experienced thoracic surgeon will consult this volume with profit, its main appeal will be to the general surgeon who wishes to keep abreast of the current thinking and procedures in thoracic surgery. It is also a very valuable reference book for the hospital library, where the interns and residents will learn much from it.

Techniques in British Surgery. Edited by Rodney Maingot, FRCS. Pp. 734, with 473 illustrations. Cloth. Price, $15.00. Philadelphia: W. B. Saunders Company, 1950.

Maingot's book comprises a number of specially selected articles on surgical subjects written by twenty-nine leading surgeons, and supplies a good cross section of British surgery as practiced today. Part I deals with surgery of the head, neck, and spinal column; Part II with surgery of the thorax, including such comparatively new subjects as the tetralogy of Fallot and other defects of the heart; Part III covers the surgery of the abdomen and pelvis; while Part IV covers various phases of orthopedic and neurological surgery. While some of the philosophy and procedures included are controversial, we have a feeling that the end-results of our British cousins compare quite favorably with our own.

This book will make a definite appeal to every American surgeon who wants to know what his British confreres of today are doing: The Britishers have always been eminently practical practitioners.

The Management of Fractures, Dislocations and Sprains. By John Albert Key, M.D., Clinical Professor of Orthopedic Surgery, Washington University; and H. Earl Conwell, Associate Professor of Orthopedic Surgery, University of Alabama. Fifth Edition. Pp. 1232. Cloth. St. Louis: C. V. Mosby Company, 1951.

It has been five years since the previous edition of this standard text book. In the new edition an effort was made to make the book less bulky, but the addition of new material and revision of old material have kept the book at only 90 pages less than its former size. Some chapters have been omitted and others are rewritten; in fact the changes have been so extensive that the entire book has had to be reset. The general pattern and arrangements of previous editions is continued. The text, as it always has been, is brief and authoritative. The illustrations are most helpful, and the index is quite complete. This is one of the really great books in this field.

CIBA Collection of Medical Illustrations. By Frank H. Netter, M.D. Pp. 222. Cloth. Price $6.50. Summit, New Jersey: Ciba Pharmaceutical Products, Inc., 1948.

This handsome volume is a compilation of pathological and anatomical paintings prepared by one of America's greatest medical illustrators. The volume contains 191 full color prints, illustrating thirteen different areas, including the lungs, chest, esophagus, duodenum, small intestine, large intestine, testicle, prostate, male breast, female breast, heart and aorta. Each plate has sufficient descriptive text, and the whole material is readily available through an index. The work is highly commendable to all practitioners.

Hair Free; The Story of Electrolysis. By Samuel Simon. Pp. 100. Cloth. Price, $. Miami Beach: Samuel Simon, 1370 Washington Avenue, 1948.

This little brochure relates to the type and causes of superflous hair and describes eleven temporary or permanent measures taken to eliminate it. The text is quite readable and dependable. The book concludes with a summary of the requirements in the various states for practitioners of this branch. The book will be of interest chiefly to cosmeticians.

Principles and Practice of Obstetrics. by J. P. Greenhill, M.D., Attending Obstetrician and Gynecologist, The Michael Reese Hospital; Obstetrician and Gynecologist, Associate Staff, The Chicago Lying-In Hospital; Attending Gynecologist, Cook County Hospital; Professor of Gynecology, Cook County Graduate School of Medicine. 10th edition, Pp. 1020, with 1140 illustrations on 864 figures, 194 in color. Cloth. Price, $12.50. Philadelphia: W. B. Saunders Company, 1951.

This is the tenth edition of a textbook on obstetrics, originally by Joseph B. Delee, M.D., which has been more or less of an institution. It is quite comprehensive and has been divided into the usual sections and chapters found in modern treatise on the subject. As the junior author states, some of the old has been deleted and newer ideas have been added.

In some previous editions of the text, considerable stress was placed on preparations for, and conduct of, home deliveries. In accordance with the trend of the times this has been reduced to its proper proportion.

The discussion of Roentgenography in Obstetrics, while not elaborate, does lay a groundwork for further study and, rightfully so, decries the increasing dependence on x-ray films rather than on careful examination and clinical pelvimetry.

Several years ago this reviewer had the privilege of hearing the junior author present his rather negative sentiments on the use of spinal anesthesia in obstetrics. I was not impressed by his statements and the present increase in usage of this form of anesthesia would seem to contradict. However, in all honesty, this may be a swing of the pendulum and the passage of time will bring forth the proper answer.

In the Treatment of Threatened Abortion the author does not seem to be impressed by the various papers on the use of projesterone and stilbestrol. In discussing this matter with other practitioners of the specialty, I am inclined to agree with him.

The author also might be called to task for his acceptance of the dictum 'Once a section, always a section'. It is a difficult problem to solve.

All in all, the text is a major contribution to the literature on the subject. The various controversial viewpoints will be accepted or rejected depending on the background of the reader and the teaching with which he has come in contact.

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 10

OCTOBER, 1951

Per Year, $4.00
Per Copy 50c

IMPRESSIONS AFTER 33 YEARS IN MEDICAL PRACTICE

Charles E. Wagner, M. D.,*
Wilmington, Del.

My medical practice began with service in the American Expeditionary Force in France during World War I. A fact which impressed me at that time was that wounded men who had to remain in shell holes for days in the heat of summer often had maggots in their wounds by the time they were rescued. It was observed, however, that such wounds were cleaner and healed more promptly than those in which there were no maggots. The ones without maggots were much more prone to infection by the gas bacillus of Welch. When that occurred a great many amputations were necessary, and if death followed it was the most horrible I have ever seen. By way of comparison, there were very few cases of gas bacillus infection during World War II, due to the progress which had been made in the meantime by medical and allied sciences for its prevention and treatment.

I was a member of an operating team, working in evacuation hospitals, during the period of American activity in World War I. While drives or attacks against the enemy were being carried on we were very busy and often had very little sleep. Rush periods were usually followed, however, by periods of relative inactivity. During World War II I served on the home front. The number of physicians serving with the armed forces left a scarcity of them in civilian practice. Consequently, there was no lull in work to be done at any time. While the conditions under which I worked in World War I were somewhat hazardous, they were much more gruelling in World War II.

When I returned from service overseas in July, 1919 I took special training to become a pediatrician. During my years in private practice I have been impressed with the well known fact that medicine is closely integrated with our social, economic and spiritual life. Let me refer to a few observations by way of illustration.

From a social standpoint, the broken home, where it involves children or young adults, has become a national disaster. Children from such homes are sent on the road of life without the love, happiness and security which they so desperately need. They often complain of abdominal pain, loss of appetite, inability to sleep, and other related nervous disorders. Grandparents often have to assume the responsibility for their care, and are unable to exercise proper discipline over them. In cases of divorce or separation of parents, the courts usually permit children to be taken back and forth from one parent who assumes responsibility to the other one who is frequently irresponsible. The impact upon the minds of many children in such cases is terrific. As at present constituted our courts are often a hindrance rather than a help in rehabilitating them.

To prevent juvenile delinquency in these children and over-crowding of our mental institutions by many of them when they reach adult life, we ought to have more assistance from the legal profession. In my efforts to help children from broken homes I have had rebuffs at the hands of the legal profession which have impressed upon me the necessity of closer medico-legal cooperation in their behalf. Primary consideration should be given to the mental and physical health of these children rather than to the whims and fancies of their delinquent parents. Family unity is the keystone of the arch which supports our great democracy. We have a great responsibility as physicians to try to preserve it, and

---

*Presidential Address, read before the Medical Society of Delaware, Wilmington, October 10, 1951.

LIBRARY OF THE
COLLEGE OF PHYSICIANS

thus prevent some of our increase in mental disorders.

Economic conditions affect the practice of medicine in many ways. The poor will always be with us, but improved living and working conditions have greatly reduced the amount of charity work we now have to do. To our younger physicians, may I express the fervent hope, in passing, that they will never have to go through a severe business depression such as we experienced in the early 1930's.

A physician is now caught in the upward spiral of our economy, along with everyone else who has to earn his living. He has an obligation to his family which he should not disregard. He ought to have time to read and study and, of course, he needs recreation. With his expenses continually rising he is forced to make an adjustment in his fees, which is not easy to do without being condemned as being too mercenary. Furthermore, the unscrupulous physician who does not allow his conscience to be his guide is the one who does untold harm to the whole medical profession in its relations with the public.

The spiritual life of a patient or his relatives or friends often influences the results obtained in his treatment. I can recall many instances where I have given sulfonamides or antibiotics and prescribed the usual methods of treatment without any apparent benefit. When I have indicated my deep concern to relatives, I have gone back the next morning to find the temperature normal and the patient markedly improved.

Relatives then informed me that all of them prayed for his recovery, which I could attribute only to the power of prayer and not to mere coincidence of treatment or to my own skill.

The way medicine is practiced has undergone a great change. It no longer takes much persuasion to get a patient to go to a hospital. The problem is when and how to obtain a hospital bed for him. There is a tendency for many physicians to attend very few patients except in their offices or in hospitals. By not seeing a patient in his own home or environment a physician may miss an important clue which will enable him to reach a correct diagnosis. The family doctor had an advantage in this respect over those physicians who practice in these days of specialism, office visits, clinics, hospitals and medical mass production. We are learning much in the field of psychosomatic medicine, the influence of the mind over bodily function. It is in this direction that our general practitioners or specialists who make home visits, have a good opportunity to find out the personal problems which may be affecting the health of their patients.

I marvel at the progress which medical science has made in the past thirty-three years. The various forms of meningitis, for instance, have gradually responded to treatment with sulfonamides and antibiotics. Until recent years we had to tell the relatives of a patient suffering from influenzal meningitis that there was no hope of recovery. It is now usually cured. Even tuberculous meningitis, which was invariably fatal, is now being successfully treated in many cases.

Catheterization of the heart and other technological advances in methods of diagnosis and treatment have been dazzling. Advances in surgery of the heart, lungs, central nervous system and every part of one's anatomy have been made possible to a very large degree by remarkable advances in anesthesiology. The medical profession and allied sciences can justly be proud of all of these and many other wonderful achievements.

In spite of our achievements, however, we ought to be humble when we pause to consider how relatively little we know about bodily function in health and disease. I am reminded of the following verse in the Bible which I have always liked because of its simple truth: "And what doth the Lord require of thee, but to do justly, and to love mercy, and to walk humbly with thy God?" Who can watch the unfolding of a beautiful Peace rose, a gorgeous sunset, the eruption of a volcano on a moonlight night, see the wonderful formations in some of the deep caverns of the earth, gaze upon the majesty of great mountain peaks, or behold the firmament on a clear night and recall the precision with which the universe moves without realizing that there is a Creator? Assuming that there is a Creator, who is there among us who does not feel humble by comparison?

I have written this address at the close of a very humid summer. The atmosphere is tense because of the uncertainty of what may happen in international affairs. Before the end of 1952 it is possible that World War III will be upon us. Let us pray that it may never come, but if it does, our duty as physicians to our fellowmen may be taxed far beyond our power to cope with its horrors.

Let us hold high the torch of our noble profession. Toward that end it is good to know that medical schools are screening applicants for admission and trying to choose those who have a pleasing personality as well as superior technical knowledge. They are trying to turn out physicians who will be kind to patients. The humanities are not to be forgotten in the swift, forward movement of science and medicine.

With just pride, therefore, in the great achievements of the medical profession and allied sciences, let us practice the healing art with humility, honesty and integrity until the people of this world learn to love and not to hate, to create and not to destroy.

SURGICAL TREATMENT OF ULCERATIVE COLITIS*

L. Kraeer Ferguson, M. D., **
Philadelphia, Pa.

The subject on which I am to speak is somewhat the opposite from the one that you have just heard, namely, that of obesity, because the people that I am going to speak to you about are not obese; as a matter of fact, they are emaciated.

The disease under discussion is ulcerative colitis, a disease which affects a fairly large proportion of our population at one time or another, not always in the severe type but often in types which are sufficient to cause marked disability. The disease is called ideopathic ulcerative colitis, because as yet our knowledge as to its cause is not too well defined.

The bacterial theory of causation, which was proposed by Bargen, has never been incriminated as the underlying cause of colitis. There have been theories of allergy as a cause of colitis, which have not been substantiated. Various types of virus have been suggested but have never been proved as etiologic agents.

Then, because these patients are of a certain definite type, ulcerative colitis, like peptic ulcer, has been looked upon as one of the psychosomatic diseases. There is some physiologic basis in fact for that. At least we know from our own experience, of individuals—and even of ourselves, perhaps—who under various stresses have had increased activity of the colon. Dennis at Minneapolis has shown that conversations about a subject which caused anger or fear or other tenseness, produced marked hyperemia and increased secretion in the mucosa of the colon, when examined proctoscopically, but his did not occur following vagotomy.

This type of observation is hard to explain and hard to accept. Nevertheless, there apparently is a definite relationship between the psyche and the bowel.

Finally, a new theory has come into consideration as a cause of ulcerative colitis, namely, that the cause of ulcerative colitis may be lysozyme, an enzyme which was demonstrated by Meyer and his group. It is known to be markedly increased in the bowel secretions in cases of ulcerative colitis as compared to the normal. It is supposed to be effective as a cause of ulcerative colitis by reason of its power to dissolve the protective mucus of the bowel, and so to allow bacteria which are commonly and ordinarily found in the bowel to become active as irritative organisms.

I have presented to you some facts and some theories as to the cause, but when it is all boiled down, we have no real cause that we know of for the disease known as ulcerative colitis. It is a disease that affects the younger age groups, as a rule, and the first slide will give you a picture of a group of patients of 53 cases, and you will note that the majority of these cases fall in the group from 10 up to 30.

This disease is equally distributed between the male and the female. It arises probably following a psychic upset, a death in the family, or loss of a job, or some other extremely disturbing incident in life, which in these very sensitive patients produces an appearance of the disease.

---

*Read before the Medical Society of Delaware, Dover, October 4, 1951.

**Professor of Surgery, Women's Medical College of Pennsylvania, and University of Pennsylvania Graduate School of Medicine.

The disease is characterized by frequency of bowel movements, which are at first liquid, later becoming purulent, often becoming bloody. The frequency of stool also is associated with a marked tenseness so that these patients are required to be within reach of a bathroom because they have to get there immediately when the urge is presented.

So with frequent stools, with loss of blood, and with frequent bowel movements at night, disturbing sleep, we find these patients going rapidly downhill, with loss of weight, marked anemia, dehydration, electrolyted balance, depletion of proteins, all contributing to the gradual deterioration of the patient.

These symptoms, I am sure, are well known to you, and it is also well known to you that this disease is one which is characterized by remissions and exacerbations. Under appropriate medical treatment: soft diets, the belladonna derivatives, rest, transfusions, intravenous therapy, if necessary, to bring them up to a normal fluid, electrolyte, and protein balance, these patients often go into a remission, and so they go back to normal health.

But the x-ray and proctoscopic observations often do not reflect the clinical improvement that these patients get when they have an improvement in their nutritional status. We find that the x-ray changes remain and proctoscopic changes still show an easily bleeding, friable mucosa, perhaps with not deep ulcerations but a mucosa that is susceptible to subsequent difficulty.

Now, you may wonder why as a surgeon I am talking about ulcerative colitis. It is because I think that surgery has a very definite place in the treatment of ulcerative colitis. That place is perhaps in two categories: (a) as an emergency treatment, and (b) as an elective treatment. Surgery must be considered in all cases in which the patient is unable to resume a normal life, even in spite of adequate and prolonged medical treatment.

If a patient is bedridden, or a chronic invalid by reason of this disease, then it would seem to me that some other form of treatment, and in this case surgery, must be considered as a method of restoring this patient to health and activity.

The indications for surgery we believe are, as I said, in two groups, one, those in which emergency surgery should be performed, and the conditions which present themselves as indications for emergency surgery you will see: perforation, uncontrolled hemorrhage, and obstruction. These complications of the ulcerative colitis often occur together.

Here is a patient who had a progressive involvement of her colon over a period of about a year, so that the entire colon was involved. She bled so that she was practically bled out on many occasions, in spite of transfusions. Eventually, it was decided that operation was the only chance of her recovery, and what was done was a colectomy. At the time, she did have a perforation. You will notice here that the mucosa is almost completely gone in this bowel.

Here is a case of perforation, hemorrhage and obstruction. You can see that the acute process has produced a kink in the large gut so that there is a marked dilatation of the colon. This dilatation, with the tension it produced, caused a perforation in the cecum. He was one who had previously bled out. Here again an ileostromy and a colectomy were performed.

As an emergency treatment, therefore, where we have bleeding, obstruction and hemorrhage, the patient is too sick not to be operated upon. If we let them go they are sure to die. So the life-saving procedure is operation, and in these cases usually it means colon resection in order to save a life.

Now, you say that is taking an awful chance. Well, it is not taking so much of a chance as without operation. They are almost sure to die, these patients that bleed excessively, unless you remove their colon. There is no other treatment.

Here is the patient whose x-ray was just seen, with complete loss of the mucous membrane, except for dots of it here and there, and this patient bled from his entire colon.

All patients are not in this acute stage.

Then comes the question as to when to advise surgery in those who are not acutely ill. As I said before, the patient that needs surgery is one in which medical treatment has shown itself to be ineffective, and the patient remains a total invalid, or almost total invalid, unable to take a part in society, or be productive at all, and in that case surgery offers him a great deal. The reason for his invalidism is usually a very marked and progressive change in the bowel, which is so great that it is irreversible. The bowel can never recover. In such cases it is foolish to go on with conservative treatment, but surgery should be given very definite consideration. The complications which produce a patient of this sort are listed here: polyposis, granulomata, neoplasm, fistulae and sinuses, and intractable secondary arthritis, iritis, and other types of chronic inflammation due to absorption from the diseased colon.

Now, polyposis is illustrated in this patient. You can see the x-ray appearance of the polyposis, and I have shown you slides which showed the pseudo-polyposis that appears due to the presence of bits of mucosa between ulcerations. This type of colon can never recover, and only operation can return him to health.

It happened, as you will notice here, that this patient's lower colon escaped, and we were able to do an anastomosis between the ileum and the sigmoid.

Here is a case illustrating granulomata. Granulomata are acute or chronic inflammatory swellings and indurations in the wall of the gut, producing constrictions such as you see here, which are indistinguishable in the x-ray and even at operation, from carcinoma. Any sort of conservative treatment in this type of case is out of the question. Removal of these masses is necessary in every case.

Here is the bowel of the patient whose X-Ray you have just seen. You see the area of granuloma here, and another one here. These are not carcinomatous but as I say, even at operation they are so indistinguishable from carcinoma that they must be treated radically.

Now, carcinoma as a complication is one which must be borne in mind by every medical man who is taking care of a patient with ulcerative colitis. At the Lahey Clinic they report that at least 30% of their patients with ulcerative colitis who have gone on for more than nine years develop carcinoma. This has been much greater than is our experience. In these 50 cases, all of which have been surgically treated cases, we have seen two cases of carcinoma, and here is one of them. You will see the carcinoma in the cecum. You can see from the appearance of his bowel that the colitis has been present for a long time. He had it for 11 years. Almost all the mucosa is gone. The bowel wall is thickened. He refused operation until he developed pain in his lower right side and was operated on elsewhere, because they thought he had appendicitis. At the time they found a large inflammatory mass, and he later came to Philadelphia and was operated upon. At operation, here is his trouble, a carcinoma developing in his bowel.

I think it is worthwhile, however, to point out in passing that the medical man who is taking care of ulcerative colitis cases must know of the danger of carcinoma developing in these diseased bowels, especially if they have gone on for a long period. He must take necessary steps to be sure that carcinomatous degeneration is not occurring. Patients who are having frequent bowel movements as a result of their colitis think little when there is a new symptom, blood coming into the bowel as a result of bleeding from a carcinoma. So at least yearly examinations of these patients by barium enema is necessary.

One of the characteristics of this disease is the formation of fistulae and sinuses. In these patients the acute inflammation often perforates the bowel, usually not into the general peritoneal cavity because the process is slow enough to wall off. But such cases have always a leakage of fluid or material from the bowel into the surrounding area. Here is one area, and here a large fistulous tract, as you can see, which in this case led down to the perineum to form perineal abscesses and sinuses. This is frequent in cases of ulcerative colitis and must not be mistaken for the usual type of fistula in ano, from which it differs because the original site of the infection is upward in the perineum, often above the level of the peritoneum. This was a patient who had been operated upon as an emergency procedure, and a double-barreled ileostomy was performed. He was advised that no further operation should be performed on him. But he continued to go downhill. He weighed about 118 pounds. He was in bed all the time. He had marked drainage from his perineum, and tenderness in his abdomen. He was operated upon, his ileostomy was revised, and a colectomy was performed.

This is an illustration of his colon. You can see the marked thickening of his colon, which resulted from his long standing ileostomy. His entire colon has been removed. He now weighs 220 pounds. He works as a chemist daily, and he has made a total and complete recovery. If he had walked in here you wouldn't know that anything had happened to him.

Here is the end stage of an ulcerative colitis, marked contraction, shortening and total loss of all function of the bowel, which is now simply a fibrous tube which transmits material as it is thrown in from the ileum, around and out through the anus, just as if it were a lead pipe. In this type of case we find absorption occurring, producing iritis, arthritis, and various other types of secondary difficulty.

What does surgery offer for these patients? It first must be said that if surgery didn't offer anything to these patients that was safe and was better than they had before, then there was no place for it. But I think surgery offers a great deal to these patients. It puts them back on their feet. It allows them to live normal lives and to exist happily rather than as an invalid.

What do we do by surgery? Well, the first principle of surgical treatment in our experience is the necessity for the diversion of the fecal stream from the area of involved bowel. The carrying out of that principle varies depending upon where the involvement is. Here is a patient who had ulcerative colitis for 11 years involving her left colon. In this patient a transverse colostomy was performed, and the entire remaining part of her gut was removed. This shows her colon and rectum and anus, which was removed in one stage. This patient was in my office day before yesterday. She works as a hairdresser. She weighs 128 pounds. She will not let herself get above that, she told me. But she has been in perfect health, and if you saw her you would not feel that she was any different from anybody else. She takes care of her colostomy without any difficulty whatever, and instead of being an invalid she is now back to the normal life. I might add, incidentally, that she tells me she is getting married.

Here is a case of polyposis involving the entire large gut, but in which the sigmoid escaped. Now, when we have proximal colitis, that is colitis involving the right side of the colon but allowing the left side or sigmoid and rectum to escape, it is often possible to sidetrack the fecal flow by doing an ileo-sigmoidostomy, and excising the involved colon. That is what was done in this case. One cannot very often do this because usually the left colon is involved early. But when it does escape it is possible to anastimose and allow the fecal flow to pass from the ileum to the sigmoid.

Now, you say, well that makes a pretty short colon; I shouldn't think that would be a very happy solution to the problem. Well, it is. These patients have two to three movements a day; their stools are not formed but they are not liquid. They have perfect control, have no trouble at all from their bowel movements, and the effect as far as their general physical condition is concerned is the same as we find when we have an ileostomy.

This possibility of joining up, as I said, is only occasionally possible. We have had only 3 cases in which we have been able to do that as a primary procedure. Where the entire bowel is involved, then an ileostomy must be performed. We make a midline incision, divide the ileum, put the distal ileum in the midline wound, and bring out the proximal ileum in an opening in the lower right quadrant as a terminal ileostomy. We use the midline wound again at a later time when colectomy is to be performed.

This type of diversion of the fecal stream is not without its difficulties. The patient immediately following operation is a problem in electrolyte, fluid, and protein balance. But this can be easily taken care of when you have had experience with these cases, so that after a period of about a week or ten days they are practically on a normal diet and without any difficulty.

The reason why these patients with ileostomy can get along pretty easily is because the secretions from the terminal ileum are caught in a bag. Any of you who have had experience with ileostomies know that the secretions of the ileum are extremely irritating to the skin of the surrounding area, and the skin excoriation is one of the complications of this type of operation. The answer to the problem is never to let the skin become excoriated. These patients have at first a tube sutured to their terminal ileum, as soon as this tube is removed a bag such as you see illustrated here is cemented to the abdominal wall. This is a firm, steel lined ring covered with rubber, which is applied with rubber cement to the skin over the ileostomy. The ileostomy comes in through this opening and drains through this bag. The bag has a spigot-like opening which is closed by a rubber band, and it hangs on the patient.

As you see in this patient. She has the bowel taken around to the sigmoid, which is implanted here. The bag, as you see, is cemented to the skin. This rubber band is removed so that the patient goes into the toilet, empties the bag as necessary, without much inconvenience. By the use of this bag almost no deformity is noted in their dress. I have many patients who play golf, swim, who do anything that the ordinary patient does.

A dressing has to be held over this mucous fistula for a time, but in most of these cases the bowel eventually closes over completely so that nothing else is worn but the bag.

We have outlined a method of treatment for these patients which requires a considerable amount of doing. It means often multiple operations. In this group of 53 patients were 95 operations, almost two operations per patient, and some of them have had more. You will notice from this list of operative procedures that the operations are by no means minor. Removal of the entire colon, or the colon and rectum, in many of these cases in one or two stages.

It is our belief that the important thing in surgical treatment is to get the patient over the immediate emergency. That may mean only an ileostomy; it may mean an ileostomy and partial resection, if the patient is in good condition or if the patient shows evidence of a carcinoma or granulomato; or it may mean that we only need to do a colostomy.

These operations are done in stages, and the stages are separated by an interval of six to eight months more or less, depending upon how the patient gets along. If the patient still has bloody discharges from the rectum, when an ileostomy has been performed, a colectomy is decided upon. In many of these cases a partial colectomy, that is around to the sigmoid, is all that is necessary. The remainder of the colon, sigmoid and rectum, becomes a simple fibrous tube which gives no further discharge and no further bother.

This type of surgery is not without complications. Obstruction of the small intestine is most often met, and this you can understand when you realize the extent of the resection of the colon, giving opportunity for the intestine to become adherent to the raw areas. As a prophylactic measure, we usually use a Miller-Abbott tube before operation, and maintain it until the ileostomy functions.

The other complication is prolapse of the ileostomy. This is a problem that nobody has solved, and it depends entirely on how big the opening is where the ileum comes through the abdominal wall. If it is too big, prolapse occurs. If it is too small, it obstructs. So it is a question of judgment and experience when you make these ileostomies. Most often the prolapse isn't serious but it is uncomfortable to the patient and often demands a revision of the ileostomy.

Now, is this a type of surgery in which the mortality is too great, the risk is too great? In our 53 cases we have had three post-operative deaths, and all those were cases in whom a simple ileostomy had been performed, nothing else but an ileostomy. They were all desperate cases, but even so one of them died as a complication of the operation when the ileostomy tube, that is the tube through the ileostomy, was allowed to go into the abdomen and perforated the ileum. The other two deaths were as a result of their colitis itself.

Of the remaining cases, 50 cases, 40 of them have excellent results. By excellent results we mean that these patients are back living normal lives. They are housewives, they are business men, they are professional men. Most of them, over half of them, have all of their colon removed, and the large part of them have a part of their colon removed. But the point is that they are able to be back and resume normal life.

Three patients have had what we class as good results. We have leaned over backwards in this group. One of them is a little girl who is perfectly well to all intents and purposes, except that she has occasional diarrhea. She has had an ileocolostomy.

The poor results were two cases of carcinoma which I mentioned, both of whom died, and I might add that carcinoma developing in ulcerative colitis has a very, very poor prognosis.

The other poor result was a patient on whom a vagotomy was performed, which I think we will not have to report in any other series.

This is a picture of a "before and after" result. This patient had been in bed for three years with her ulcerative colitis. She weighed 76 pounds at operation. Her perineum was a complete ulcer, and had been diagnosed as tuberculosis of the bowel at one of the hospitals in Philadelphia. She was a patient whose short colon I showed you. As you can imagine, she was a complete invalid. An ileostomy and colectomy was performed, a sub-total colectomy. This is her sigmoid implanted in the midline wound. She is now recovering.

This is three weeks after her operation. She hadn't been able to stand for three years before that. A year later, you can see the difference.

This is not remarkable. It is not unusual. I can show you 30 or 40 patients with this same thing. She worked in a music store selling records. I tell you that simply to show you that she was acceptable socially. There was no odor, no disagreeable difficulty. She later was married, and shortly after she was married she came to me and said she was pregnant. I had visions of lots of difficulty. She had her sigmoid implanted in the midline wound. The uterus lies in front of this. The enlarging uterus I could picture as giving a great deal of trouble to us. I told her I didn't think she ought to go on with her pregnancy. She said she was going to anyway. So she did. She delivered a perfectly normal child, and she has had another one since, with most of her colon out and a complete and total recovery following operation.

The results, then, I think are absolutely beyond expectation. The patients return to normal life. The weight gained is remarkable; I have had some gain as much as 120 pounds. The other thing that is quite typical and extraordinary about these patients is their change in personality. These people who were so weak, so whiny, so absolutely disagreeable that nobody, even their family, could get along with them, are changed into people who are happy, productive, affable, lovely people. Strange enough, almost all these female patients that I have anything to do with have become beautiful.

Discussion

Dr. O. A. James: (Milford) We certainly have heard an excellent paper, and we are greatly indebted to Dr. Ferguson for giving us this opportunity. As we all know, this disease is a very cruel and trying one from the standpoint of the patient. In most of the cases I have dealt with they have been very trying to the doctor—in fact, I should say doctors—because they all demand close cooperation between the medical man and the surgeon.

On reviewing the literature, I have found that in the past two years there have been more than 30 papers on this subject, which indicates to me that the problem is certainly a very serious one, a difficult one in many places, and it is being studied at the present time. One-third of these papers deal with surgical treatment. We may quickly assume that surgery is the final answer, but I would like to emphasize a point that Dr. Ferguson made: that the disease is still primarily a medical problem and that surgery is indicated mainly in the complications.

In a paper that came from the Cleveland Clinic last April, it was stated that at the Mayo Clinic only 5% of the cases went to surgery; at the clinic in Cleveland, 13%; and at the Lahey Clinic, 26%.

Dr. Ferguson has very clearly pointed out to us the indications for surgery. I had some questions in my mind which I was going to ask him, but he has already answered those. Most surgeons frequently are confronted with questions by medical men: "I have a desperate case, acute fulminating one, which is not responding. What shall we do? Could we use an ileostomy?" Dr. Ferguson has answered that question, and in the literature it is stated that the mortality rate in those cases is very high, and is such that we do not like to do surgery unless we absolutely have to, and those indications have already been stated.

Again I would like to say his paper has been very interesting, very informative, and I am sure that we all will be in much better position to take care of these problems.

Dr. Lawrence J. Jones: (Wilmington): There is very little I can add to this paper. I want to congratulate Dr. Ferguson on his very comprehensive talk on this subject.

I would like to emphasize the bag that he put on this drain. These patients have been very much happier since that bag was available.

I think that one of the problems is that these cases surgically do better if they are operated on early enough. On the other hand, some of the cases where surgery is considered do recover medically, and that is the biggest problem, I think, in the diagnosis.

Dr. Lemuel C. McGee: (Wilmington): I should like to comment on Dr. Jones' problem of deciding when to move in. I don't believe it is too difficult to decide. I think the criteria which come out of the experience of Dr. Ferguson and others—and when I say others I find a remarkable similarity, or agreement, as to those indications for surgery—should be accepted and acted upon. I feel that occasionally the physician robs the patient of the optimum opportunity for surgery when it is required. We recognize that there are stages in the life history of a peptic ulcer where surgery is the best approach, and the indications are fairly clear for the type of operation to be performed. We recognize also that in the peripheral vascular disease there comes a time when medical treatment becomes utterly inadequate and where amputation must be resorted to because our medical procedures fail. Once that is recognized, we should move and move quickly for the benefit of the patient.

Likewise there are an appreciable number of these patients with ulcerative colitis in whom those indications appear, and we should keep them in mind and not through a process of wishful thinking pass through the optimum period ano get the patient in a moribund condition which gives the surgeon extra hazard and sometimes robs the patient of his chance to survive.

As I see the picture of the girl who has had her two babies after recovery, I have a feeling that it wasn't necessary for her to get to the poor nutritional state in the first place, that there was a case of resistance either on the part of the patient or of the medical advisor in whom she had confidence, which allowed her to get to that state before anything was done.

Dr. Lewis B. Flinn: (Wilmington): I would like to ask Dr. Ferguson in connection with those patients in whom he is able to keep the lower part of the colon or sigmoid, in the ileo-colostomy cases, what percentage of those cases subsequently develop disease in the remaining colon?

Also, I would like to ask Dr. Ferguson if he has any information on the effect of compound E, ACTH, or cortisone in the treatment of the disease, or perhaps as an adjunct in preparation for surgery.

Dr. Harold S. Rafal: (Wilmington): I would like to ask a question of Dr. Ferguson. Only 13 of these patients had their rectum removed, out of 50. Did 8% of the patients retaining the stump develop carcinoma in that stump?

Dr. Ferguson: I want to thank the discussants for their interesting comments.

As to the problems that are presented, I think that it was well worthwhile emphasizing the fact that there is a maximum time in which operation must be performed. I am not sure that it is the maximum time as far as the patient is concerned. I think it is the maximum time as far as the doctor is concerned. You have to come to a conclusion that this bowel is not going to recover, and when you come to that conclusion then I think you've got to be willing to subject your patient to surgery.

As far as the lower segment is concerned, understand me, I am not recommending leaving the lower segment in if there is any reason to take it out. I have had three patients in which we have been able to take out an ileotomy and reanastomose to the sigmoid. A couple of those have gone two years, and one of them one year, without any recurrence in the lower rectal segment.

I don't do that until the patient has gone for at least a year and there is evidently no disease in the lower segment. In such cases I think it is safe to try them. I warn the patient that it may be necessary for us to make an ileostomy again. But he is willing, as a rule, to take that chance. So far, with that program we haven't had any complications.

As to leaving the lower rectal segment in place, as I said, I believe that the operation should be done in stages, whatever is necessary to make the patient well. I think the main part is to take out the diseased colon. Often this small area of colon between the sigmoid and rectum is not enough to give the patient much in the way of symptoms. Furthermore, this is an area which can be inspected readily by proctoscopic examination, and any appearance of symptoms is an indication that something ought to be done. If there is a continued secretion, the patient has bleeding continually from that small segment, then his disease is not quieting down or he's got some complications and it ought to be taken out.

But as a rule, with the retained rectal segment they have a relatively minor discharge, maybe once every two or three weeks a small discharge, and that's all. Now, if it is more than that, then you can be sure that there is something going on.

I think it is perfectly safe, as far as carcinoma is concerned, to leave that segment in. I think our percentage of removals is greater than shown there. I didn't bring one slide that showed how many were completely removed.

As far as the use of ACTH and cortisone and compound E is concerned, I am a surgeon and not a medical man and I would not be expected to answer that question. I think that is an unfair question.

However, I might say that as far as the cases that we see are concerned, that is we as surgeons, I don't believe that any of these things do any good. In our experience, the patients that come to us have bowels that are completely irreversible, and in such cases you wouldn't expect to have any result from cortisone or ACTH. There is evidence, perhaps—perhaps—that in a few early cases these drugs may be worthwhile, but certainly not in the type of cases that we see referred for surgery.

GALLSTONE ILEUS

Observations Based on Three Recent Cases

John C. Pierson, M. D.*
and
Edwin A. Mekanik, M. D.**
Wilmington, Del.

Within the past seventeen months 3 cases of small intestinal obstruction produced by an impacted gallstone have been seen on the Surgical Service at the Memorial Hospital. Two of these were observed within the space of 5 weeks.

This experience, obviously, is unusual enough to make one challenge its authenticity. Walters and Snell state, for example, that approximately 2% of all cases of intestinal obstruction are due to gallstones. It is realized that the incidence quoted above, 3 cases in a seventeen months period, is distinctly misleading in its implication. It has served, however, to focus our attention more sharply upon this particular clinical entity and the accompanying discussion is derived from contact with these 3 cases and from a survey of the surgical literature pertaining to the subject.

---

*Chief of Surgery, Memorial Hospital.

**Assistant Resident in Surgery, Memorial Hospital.

The cases in question ranged in age from 63 to 83 which is in keeping with the reported experiences of others. This is based upon the fact that gallstones in the intestinal tract usually represent a complication of long-standing biliary lithiasis. The mechanism responsible for this is the development of a fistulous tract between the gallbladder and adjacent viscera, viz: stomach, duodenum, jejunum, ileum or colon, which represents the end-stage of a process that was initiated by cholecystitis, stone formation and during an acute episode, gangrene of the gallbladder wall with perforation into whatever adjacent structures have become involved in the inflammatory process. Rarely, a stone may ulcerate from the common duct into an adjacent segment of bowel.

Frequently, it is possible to elicit a history from patients in the older age group of long-standing gallbladder disease. Since it is conceivable that a stone may remain silent in the intestine for a long period of time, the absence of such a history should not exclude the possibility of a gallstone as the culprit when a patient is seen in the acute obstruction phase. The episode of acute cholecystitis may have relieved itself by fistulous discharge of a gallstone but the incident may not be recalled by the patient. Accordingly, the possibility of a gallstone type of intestinal obstruction may not even remotely suggest itself. Indeed, the practical importance of a diagnosis in these cases revolves not nearly so much on the etiology as upon the early and accurate recognition of the obstruction itself. That it is more than of mere academic interest, however, is illustrated by Case I in which a Cantor tube was employed for a brief period before surgery was undertaken. If the underlying cause of the obstruction could have been established earlier, there would have been no delay in attacking the specific nature of the obstruction.

That pre-operative diagnosis is possible in a certain percentage of cases is illustrated again by Case I and Case III. Wagensteen reports, that as their awareness of the possibility has increased, their accuracy of pre-operative recognition has progressively risen.

The clinical picture of intestinal obstruction caused by gallstones is essentially that of obstruction produced by other factors such as inflammatory bands, etc. The sequence of recurrent, crampy, colicky pains, nausea, vomiting, visible peristalsis and the detection of an intestinal pattern is the classical finding in small bowel obstruction and was noted in all of the 3 cases to be described. It is only when a scout film of the abdomen reveals a shadow consistent in size and shape with a gallstone beyond the region of the gallbladder, that ones attention is attracted to it as a possible basis for the obstructive mechanism. Such an observation was made in the 1st and 3rd cases reported herewith. This finding is all the more significant when from a comparison of films it is noted that an opacity has moved to another location. This change of position was also noted in Cases I and III.

In 2 of the cases to be presented, an incidental finding further complicated the problem of ascribing a cause for the obstruction. The complicating factor was the discovery of a femoral hernia and in each case, naturally, the incision was planned on the hypothesis that the incarcerated femoral hernia was responsible for the obstruction. It seems worthwhile reemphasizing, as illustrated in Case II, that the inguinal approach to incarcerated or strangulated femoral hernia has a great deal in its favor. While it has been recommended chiefly because of the ease and safety with which intestinal resection can be carried out, if necessary, it is apparent that it has other advantages, viz: the accessibility to the free peritoneal cavity in the case of a mistaken diagnosis.

The foregoing comments have been suggested by the experience provided by the following three cases:

Case I. E.E.A., a 63 year old white female, admitted to the hospital 3-30-50 with a history of vomiting, abdominal "swelling" and crampy abdominal pains beginning in the lateral portions of both upper abdominal quadrants, referred to the midline and persistent since their onset 3 days prior to admission. She had no bowel movements and did not expel any flatus since the onset of her symptoms.

Past history revealed no change in bowel habits, diarrhea, tarry stools or weight loss. No intolerance to specific foods was elicited although "many years ago" she had had an episode of pain similar to her present complaints which had spontaneously subsided.

Physical examination revealed an obese white female in no apparent distress although evidence of dehydration was present. Heart and lungs were essentially normal. The abdomen, although difficult to examine because of the patient's obesity, was thought to be slightly distended and tympanitic to percussion. Peristalsis was high pitched and hyperactive. No organs or masses were palpable. The abdominal orifices were negative for herniae. Pelvic and rectal examination was negative. T-101 P- 88 R- 20. The impression after examination, was that the patient had a low-grade incomplete intestinal obstruction. Abdominal flat-plate revealed a "gas pattern in the intestinal tract indicative of an obstructed small intestine. The amount of dilated loops indicate presumptively that the obstruction is in the ileum . . . the colon shows no obstructive signs. A calculus in the upper right quadrant is indicated well out to the lateral side and may be biliary or it may be a calcification of the costal cartilages. A Cantor tube was passed and intravenous fluids were started.

Admission chemistries were essentially within normal limits except for a B.U.N. of 27 mgms.%. On the second hospital day the abdomen was softer and an abdominal X-ray showed ". . . Cantor tube which has gone through the stomach, duodenum and has apparently passed into the ileum . . . but . . . has not traversed the obstructed portion of the small intestine."

With apparent improvement in the patient's condition, the Cantor tube was removed and the patient allowed fluids by mouth. Prompt return of crampy abdominal pains and vomiting required re-intubation.

On the fifth hospital day, after a review of the previous abdominal films, it was decided that exploration was indicated and that the mechanism might be attributed to an obstructing calculus. At the mid-portion of the ileum an impacted gallstone was found and removed by enterotomy. The biliary calculus was oval-shaped, dark-brown in color, friable and measured 2.5 x 4 x 3 cms.

The patient's post-operative course was satisfactory, complicated only by a transient cystitis and she was discharged on 4-23-50.

Case II. H.J.T., an 83 year old white female, was readmitted to the hospital 7-3-51 after a previous admission on 6-22-51 for stabilization of her diabetes. During her first hospital admission a gastrointestinal survey was done for some vague digestive complaints and was reported as normal. Two days prior to her second admission she developed crampy abdominal pains shortly after her evening meal. The pains subsided gradually during the course of the evening but reappeared the next morning after breakfast accompanied by nausea and vomiting. Again the pains subsided with no treatment but the nausea persisted. The next morning the patient was admitted.

Examination of the patient revealed a slender, aged white female in no apparent distress. T- 97.6 P-106 R- 16. Heart and lungs were negative for pathology. B.P. 110/80.

Abdominal examination revealed a slight distention with a faint, small bowel pattern. Peristalsis was hyperactive. No masses could be palpated and the examiner could elicit no abdominal tenderness. In the right femoral canal an irreducible, slightly tender tumefaction was noted measuring approximately 3 x 2 x 2 cms. A provisional diagnosis of small intestinal obstruction due to an incarcerated femoral hernia was made. The patient was intubated, Wangersteen suction instituted and parenteral fluids started.

The next morning gentle palpation of the tumefaction in the right femoral canal elicited nausea and local pain. Since no regression of the patient's symptoms or local pathology had occurred, operative intervention was deemed advisible. Exploration of the supposed incarcerated femoral hernia was done through the right inguinal canal. "Upon entering the free peritoneal cavity, a moderate amount of free fluid was noted. As an attempt was made to enter the ring leading to the femoral hernia sac, it was found that the ring would barely admit the tip of the little finger, so that it was apparent that the small intestinal pattern noted prior to operation, had not been produced by incarceration of a loop of small bowel in the femoral hernia sac. The latter was distended, edematous and likewise contained free fluid but merely secondary to the general peritoneal reaction. In view of these findings it was realized that search must be made for the site of the obstruction within the free peritoneal cavity. This was quickly located as a mass was felt within a lop of small bowel and when this was delivered, it was found to consist of an impacted gallstone. This stone was about 7 cms. in length and in diameter exactly conformed to the lumen of the small intestine. It was easily delivered through an incision made along the anti-mesenteric margin of the small bowel. There was no evidence of circulatory change in the intestine and the segment proximal to the impacted stone was only moderately distended.''

The patient's post-operative course was essentially satisfactory and she was discharged on 7-21-51. Subsequent x-ray examination of the stone removed showed it to be non-opaque.

Case III. M.E.B., a 76 year old white female was admitted to the surgical service on 8-17-51 with a history of abdominal pain associated with recurrent nausea and vomiting which started on 8-13-51 with a dull pain in the epigastrium followed by the repeated regurgitations. Her symptoms gradually increased in intensity until about midnight 8-16-51 when following a particularly severe episode of vomiting she obtained relief. Shortly afterwards the patient was admitted to the hospital with a provisional diagnosis of intestinal obstruction—etiology undetermined.

Examination revealed an aged, obese white female in no apparent distress. T-97, P-87, R- 22, BP 140/75.

The most significant findings were limited to the abdomen which was slightly distended and tympanitic on percussion. There was moderate tenderness and muscle guarding in the right upper quadrant extending into the epigastrium. No palpable masses were detected. The abdominal orifices were examined and considered negative.

The past medical history of the patient was significant in that apparently she had chronic gall bladder disease with its attendant symptoms and in addition was in early congestive failure. The patient was intubated and parenteral fluids were started.

Admission studies revealed the following: Rbc 4.49, Hgb 14.5, Wbc 19,000, 80% seg. neutrophiles, 1% non segs, 16% lymphocytes, 3% monocytes. Urinalysis showed a slight trace of albumin and a 2 plus sugar reaction (attributed to intravenous glucose.) CO2-69%, BUN 35.5, plasma chlorides 580. Sodium 146 milliequivalents, potassium 3.6 milliequivalents.

Because of the ''coffee-like'' character of the vomitus and the impression of the surgeon that a pyloric obstruction was the pathology, an upper gastro-intestinal survey was done. The examination was unsatisfactory because of retained debris in the stomach. However, passage of an appreciable amount of barium through the pylorus ruled out the possibility of pyloric obstruction. The barium was then aspirated as completely as possible. Although drainage of intestinal contents was considered satisfactory the abdomen became more diffusely tender and the distension more prominent. On 8-20-51 the drainage was distinctly feculent. On 8-21-51, four days after admission, a right femoral hernia was discovered which had previously not been present. With this apparent explanation of the patient's symptoms, exploration of the femoral canal was done under local anesthesia. The operative note indicated that there was some question as to whether this accounted for the apparent intestinal obstruction. ''There was a large femoral hernia sac present with a large amount of incarcerated omentum within. It was noted that this omentum was not particularly indurated or edematous and apparently had had only a brief residence within the hernia sac.'' The hernia sac was obliterated and a McVey hernioplasty carried out.

Post-operatively the patient continued to vomit and the distension persisted although intestinal intubation was considered satisfactory. Repeat abdominal x-rays on 8-23-51 were done with the following comment. "A complete review of all the films taken, suggests the appearance of a large calculus seen about the level of L2 on 8-17-51 immediately adjacent to the duodenal cap. In the film taken on 8-23-51 . . . this calculus is not recognized in the same position. On 8-23-51 there is a shadow in the left plevis which is very close in appearance to the ring-like shadow in the right upper abdomen on 8-17-51. It is possible that this patient has had a rupture of the gall bladder . . . also . . . that a fistula may have formed betwen the gall bladder and intestinal tract and the stone may be in the terminal ileum."

On 8-25-51 re-exploration revealed an impacted gall blader stone about two feet from the ileo-caecal valve. Examination of the small bowel proximal and distal to the stone revealed no evidence of secondary stones. A vertical enterotomy incision was made, the stone removed and the enterotomy wound closed at right angles to the line of initial incision.

The patient's subsequent post operative course was more satisfactory, complicated only by a slowly subsiding ileus and a superficial thrombophlebitis of the right leg. On 9-10-51 the patient was discharged completely asymptomatic.

SUMMARY

1. Three cases of acute small bowel obstruction due to an impacted gallstone have been presented.
2. Co-existing femoral hernia was present in two of the cases which prompted operation on the assumption that the hernia was the cause of the obstruction.
3. Evidence is presented of the advantage of the inguinal approach to an incarcerated femoral hernia.
4. X-ray diagnosis of intestinal obstruction due to gallstone impaction was possible in 2 cases. Occasional cases may be encountered where the stone may be non-opaque as illustrated in Case II.

BIBLIOGRAPHY

Denneen, Edward V. and Broderick, Thomas C.: New York, N. Y. Gallstone Intestinal Obstruction; Annals of Surgery, 131:2.

Foss, H. L. and Summers, J. D.: Intestinal Obstruction from Gallstones, Annals of Surgery, 115: 721, 1942.

Hand, F. H. and Gilmore, W. E.: Gallstone Ileus; American Journal of Surgery, 59: 72, 1943.

Mayo, C. W., et al: Rochester, Minn. Acute Intestinal Obstruction; S. G. O. 71: 589, 1940.

Mayo, C. W. and Brown, P. W.: Rochester, Minn. Intestinal Obstruction caused by a Gallstone Surgery, Vol. 25, #6, June, 1949.

Wakefield, E. G., Vickers, P. M. and Walters, W.: Cholecystenteric Fistulas; Surgery, 5: 674-677, 1939.

Wangensteen O. H.: Intestinal Obstructions, 1942, 2nd Edition; C. C. Thomas, Springfield, Illinois.

BRONCHIAL ADENOMA

J. W. Abbiss, M. B.,*
Wilmington, Del.

The type of lung tumor known as bronchial adenoma has been recognized for many years, having been described originally by Mueller[1] in 1882. From that time, until some 15 years ago, this type of lung tumor received scant attention in the literature, probably owing to the difficulties in its diagnosis, but with the advent of radical surgery in the treatment of bronchogenic carcinoma, bronchial adenomas have been more readily recognized, until at the present time they form in some series the second most common type of lung tumor, and are the best common type of benign bronchial tumors. Their recognition is the most important because of the favorable outlook following adequate surgical removal.

PATHOLOGY

The tumor occurs most commonly in young adults, more often in women than in men in a proportion of roughly 3:1. Usually the site of origin is in the larger bronchi close to the hilus of the lung, and it seems likely that the bronchial glands, which are seromucous in type are the structures giving rise to adenomas. The tumor may be purely endobronchial, lying in the bronchial lumen and attached to the wall by either a thin pedicle or a broad base, or it may be partly endobronchial and partly extrabronchial. In the latter case, the main mass of the tumor may be concealed in the lung substance with only a small part lying in the bronchial lumen, giving the so-called iceberg effect. The tumors are usually well defined, rounded or lobulated masses varying from 2 to 4 cm. in diameter, having a firm consistency and a pinkish-white color. Microscopically the structure varies from tumor to tumor, but is very uniform for any one particular specimen. Usually the stucture consists of cuboidal cells with deeply staining nuclei aranged in columns, masses, or an acinar pattern, lying in a very vascular connective tissue stroma. Mitotic figures are not seen. The tumors grow expansively and the endobronchial portion is usually covered by a layer of bronchial epithelium, but within the lung substance some infiltration may be seen. The great majority of bronchial adenomas are benign tumors, but occasional cases show metastases. These may be either to the regional lymph nodes, or as in a case described by Willis[2], to subcutaneous tissues, bones, lungs, and liver. Although metastasis is uncommon, the fact that it does undoubtedly occur indicates that surgical resection is probably the treatment of choice.

---

*Director of Laboratory and Pathologist, Memorial Hospital.

Clinical Features

Clinically, the patient may have only vague symptoms such as repeated colds, but there is often cough, and in many cases this is associated with hemoptysis. These symptoms may lead the physician to suspect tuberculosis or bronchogenic carcinoma, and occasionally there is a considerable lapse of time before the true diagnosis is established. Physical signs may be absent or slight, depending on the amount of blockage produced in the affected bronchus.

Diagnosis

Plain x-rays of the chest may show atelectasis of the lung, but if occlusion of the bronchus has not occurred, the x-ray findings may be negative. In the latter case, bronchography may be of assistance in showing a filling defect in the bronchial outline. Diagnosis is usualy established by bronchoscopy, since in the great majority of cases the tumor can be readily seen and a biopsy taken. Frequently there is considerable bleeding when the tumor is incised, owing to its great vascularity, and this bleeding may cause the bronchoscopist considerable difficulty, although it usually ceases rapidly.

Treatment

As mentioned earlier, lung resection, either lobectomy or pneumonectomy, is now considered the treatment of choice in this type of tumor. Some clinics, however, practice local removal of the tumor through a bronchoscope, this method, however, is only possible when the growth is entirely endobronchial, and even then, local recurrence may occur. Furthermore, local removal by this route may prove difficult if not impossible owing to bleeding when the tumor is incised.

Case History

Some of the points mentioned above are well demonstrated by the following case.

The patient, a colored female, aged 38 years, was admitted to the hospital with a history of having coughed up some blood six weeks previously. Four weeks prior to admission she developed a persistent cough and "cold" which failed to clear up. On occasion she noticed that the sputum was blood-stained. She had had no weight loss and no night sweats. Physical examination did not reveal any abnormalities. X-ray of the chest revealed some change in the right main bronchus and lower lobe bronchial distribution, suggesting bronchiectasis. A bronchoscopic examination was carried out, and this revealed a pedunculated lesion almost completely obstructing the lumen of the right main bronchus. On cutting into the lesion to obtain biopsy material, there was profuse hemorrhage. Microscopic examination of the material removed revealed a tumor composed of small, uniform, deeply staining cells arranged in cords, and showing an attempt at acinar formation, these cells lying in a vascular connective tissue stroma. No mitotic figures were seen. The diagnosis was adenoma of the bronchus.

The patient was discharged, and after six weeks was readmitted to the hospital. During the interval she had continued to have blood-stained sputum. On this admission, since the tumor was pedunculated and apparently entirely endobronchial in situation, an attempt to remove it at bronchoscopy was carried out. Owing to profuse bleeding, however, the operation had to be abandoned when only a small fragment of tumor had been removed.

Subsequently, the patient continued to cough up blood-stained sputum, and it was decided to perform radical surgery with removal of the affected lobe of the lung. The chest was opened and the right middle lobe of the lung was found to be collapsed and presented as an abscess cavity. A tumor mass

LIBRARY OF THE
COLLEGE OF PHYSICIANS

arose from the bronchus intermedius and was also attached to the origin of the upper lobe bronchus. Because of this a pneumonectomy had to be performed, since a lobectomy would not have resulted in adequate resection of the tumor. Several bronchial lymph nodes were removed for histological study at the same time. Pathological examination showed a similar picture to that seen in the biopsy material, and no lymph node metastases were found.

The patient made a good recovery from her operation and the future outlook in her case is excellent.

Summary

The main features of bronchial adenoma are briefly described and a typical case history is presented.

REFERENCES

1. Mueller, H.: Pathogenesis of Bronchiectasis, naug. Dissert., Ermsleben, A. H., Busch, 1882.
2. Willis, R. A.: Pathology of Tumors, page 379, 1948.

PELVIC EVISCERATION
With Construction of New Bladder in One Stage
A Case Report

Harold S. Rafal, M. D.,*
Wilmington, Del.

There are many facets to the problem of the control of cancer. Undoubtedly, the most important of these is early detection, early diagnosis, and early and efficient treatment. However, the accomplishment of this ideal lies somewhere in the unforeseeable future. Accordingly, physicians and surgeons will be faced, for some time to come, with the problem of treating advanced cancer. There is no question that we toil on marginal soil with this group of patients. Nevertheless, it is our obligation to do all we can for the sick, however advanced the stage of the disease at the time they present themselves.

There are many who vehemently oppose pelvic evisceration on the grounds that so few can be salvaged even after such massive and mutilating surgery; that life is not worth living even if the cancer is eradicated; and that it is preferable to sedate the victims as best we can and reconcile ourselves to the "inevitable".

In answer to these earnest criticisms it can be said that, though there are no published five year survival rates, the evidence at hand leaves little doubt that people who survive the procedure without untoward complications, live in far better health and well-being than those who are abandoned without definitive treatment. Also, that here in Delaware and immediately adjacent areas, there are several women who are living outwardly normal lives, doing all their own housework, and caring for their families, after having submitted to pelvic evisceration.

Since most untreated cases pass their last lingering days in terminal care institutions (even the most devoted families usually cannot carry the burden to the end) many physicians are not aware of the agony of intractable pain, foul slough, and recurrent hemorrhages which at first terrify the patient but later become her hope of prompt delivery from her suffering.

One need but observe one or two of these to be strongly influenced that any operation, no matter how mutilating, is worthwhile, *if it* offers hope for cure. If clinical indications are that the operation offers no faint ray of hope of removal of all of the cancer, then, in my personal opinion, the operation is definitely contraindicated, for prompt recurrence is inevitable and the same gruesome terminal course will most likely ensue. The main clinical contraindications are the presence of demonstrable distant metastases and fixation of the local tumor growth to the pelvic wall. The presence of persistent pain along the obturator nerve distribution strongly suggests the latter.

The formidable procedure of pelvic evisceration received its impetus in this country from the work of Brunschwig, who demonstrated its technical feasibility. Many others have done much to advance our knowledge of the technical, biochemical, and physiologic problems of the operation and its most difficult and harrowing post-operative course.

In its widest application the operation entails the excision of the bladder and lower ureters, the rectum, the entire internal and external genitalia, the hypo-gastric vessels, and, of course, all the lymphatic tissue of the pelvis including the obturator nodes. There are many variants in the management of the stumps of the ureters and sigmoid colon. To mention several, there are:

---

*Associate in Surgery, Memorial Hospital.

1. implantation of the ureters into the distal colon, with terminal sigmoid colostomy (the "wet colostomy").
2. implantation of the ureters into the distal colon with terminal sigmoid colostomy and proximal colostomy to divert the fecal stream from the new urinary receptacle.
3. bilateral cutaneous ureterostomies and terminal colostomy.
4. implantation of the ureters into an isolated segment of ileum and terminal sigmoid colostomy.
5. implantation of the ureters into a new bladder constructed of the ascending colon using the terminal ileum as the new urethra and re-establishing intestinal continuity by ileo-transverse colostomy; terminal sigmoid colostomy.

Of these five methods, all but the last requires some form of bag or prosthesis to function as an external artificial receptacle of excreta.

The principle of pelvic evisceration has been applied in almost all fields of surgery which deal with organs located in the pelvis. However, the experience gained locally with this operation has been predominantly with cervix cancer, and most particularly with recurrent cervix cancer. In cervix cancer recurrent after radio-therapy it is almost universal experience that a repeated course of x-ray or radium is worse than useless. The cells comprising the recurrent cancer are decendants of those cells which have already proven themselves to be radio-resistant. In addition, since the initial course of therapy of necessity produced damage to adjacent bladder and rectum, a second course is especially likely to produce irreversible damage with radiation cystitis and factitial proctitis which are often exceedingly difficult to treat successfully. A good number of these go even further to produce radio-necrosis with the appearance of vesico-vaginal and recto-vaginal fistulas.

The choice remaining, therefore, is between doing nothing definitive or offering the patient pelvic evisceration. To those who choose the latter, it is our duty to explore every means which will reduce to a minimum the necessary distortion of human anatomy and physiology which this operation entails. It was with this in mind that the procedure to be briefly described below was utilized. Though there are, as was previously mentioned, several patients who are doing very well with "wet colostomies", it was hoped that this procedure would offer something better. Thus far, I believe, the hope has been fulfilled.

Case Report

L. C., a 33-year-old colored female was first seen on May 10, 1950 with the chief complaint of vaginal spotting for 3-4 days after menses for one year. There had been no post-coital bleeding. About one month prior to being seen in the Carpenter Memorial Clinic, she had been examined by her physician, who obtained a vaginal smear which was reported as positive for cancer.

Her past history revealed that for 5 years she had had repeated bouts of LLQ abdominal pain, relieved by the administration of penicillin. She had also been treated for lues.

On physical examination there was noted "on the anterior lip of the cervix, from the external os, extending almost to the periphery but not quite, an irregular but nonulcerated lesion approximately 2 cms. in diameter, the nature of which is uncertain. Multiple biopsies were obtained from this area."

The biopsy was reported as showing squamous cell carcinoma of the cervix, Grade IV.

Because of the limited physical extent of her lesion it was felt that external irradiation was not necessary and she was treated with intra-cavitary radium alone for a total dose of 4800 mgm. hours in June 1950.

Following this the patient had marked local reaction with slough and purulent discharge which persisted over a long period of time. She was treated both as an in-patient and out-patient with various douches, debridements, dilatations, penicillin, etc., and six months following radium treatment appeared to be considerably better. However, a slough lined crater was still present and the patient would bleed occasionally. Though the possibility of recurrent or residual disease was constantly kept in mind it was not until March

1951 that the third of a series of biopsies was reported as positive for carcinoma.

Induration of the left parametrium had been present all along which, of course, we could not be certain was inflammatory or malignant.

Admission to the hospital was arranged for study and preparation for surgery. Since this patient was young, very thin, and in generally excellent condition aside from her local lesion, she represented the ideal type to subject to this prolonged procedure. Previous unhappy experience with the same operation, proposed to be done in stages, in an obese patient, had convinced me that obesity is an extremely serious obstacle because of the almost insurmountable technical difficulties it presents.

On May 3, 1951 operation was performed under endotracheal cyclopropane anesthesia, supplemented with sodium pentothal and curare. The operation performed was pelvic evisceration, construction of a new bladder from the right colon, ureteral implantation into the new bladder with ileostomy, ileo-transverse colostomy, sigmoid endcolostomy, and radical vulvo-vaginectomy.

Findings: There was no evidence of infiltration or metastatic deposits in either lobe of the liver. Both kidneys were normal to palpation. Neither ureter was distended. There was marked hyperemia of the pelvic organs including the bladder, uterus, and lower sigmoid segment, presumably secondary to radiation and inflammation. Slight touch with gauze produced a marked amount of oozing from the serosal surfaces of these organs. The tubes and ovaries were bound down with adhesions as if secondary to previous pelvic inflammatory disease which had perhaps been provoked by radiation. Both parametria were thickened, the left more so than the right, though neither was fixed to the lateral pelvic wall. The entire colon was packed with soft fecal matter, despite the fact that the patient had had high colonic irrigations for 5 days and aureomycin orally in high dosage for a week.

There were numerous nodes palpable along the iliac vessels and the aorta as high as could be palpated. They were also present in the meso-ileum. Apparently, since the patient was very thin, the lymph nodes were more readily discernible than usual. However, because of the possibility that these represented metastatic deposits, a biopsy was taken of a lymph node just above the bifurcation of the aorta. This was sectioned and grossly appeared to be uninvolved by tumor.

There were no visible plaques of tumor anywhere.

Technique: A modified Cheney incision was made in a curve from one anterior superior iliac spine to the other with the convexity downward. The musculo-fascial structures of the abdominal wall were divided in the course of their fibers or transected as indicated. Exploration was carried out and the above findings noted. An incision was made along the white line of peritoneal reflection and the right side of the colon mobilized up to just beyond the hepatic flexure. The transverse colon was divided at this point and both ends turned in. The terminal ileum was divided about 12 inches from the ileo-cecal valve and the proximal stump turned in. A side-to-side ileo-transverse colostomy was then done.

The mesentery of the isolated segment of terminal ileum and right colon was then carefully incised until the base at the ileo-colic artery and vein was reached. Extreme care was taken to preserve these vessels. Bringing the isolated colon and attached segment of terminal ileum into the lower abdomen and pelvis could then easily be done without producing any tension or kinking of the main ileo-colic vessels.

The impacted feces in the right colon were then removed by irrigation through the terminal ileum with a solution of half strength hydrogen peroxide. This was continued until all fecal matter was washed out and returns were clear.

The ureters were easily identified by palpating the pelvic wall and identifying the indwelling catheters. They were transected about 2½ inches below the level of the sacral promontory and the catheters brought out and permitted to drain over the sides into test tubes. It was felt that if the ureters were implanted into the right colon at this point in the operation, the presence of the right colon in the lower abdomen would interfere with exposure and visualization in the pelvis, so this was deferred until later.

Attention was then directed to the pelvic evisceration proper. The superior hemorrhoidal vessels were identified, ligated, and severed. The sigmoid colon was divided between clamps. The distal sigmoid, rectum, lower ureters, bladder, uterus, adnexae, and parametria were then dissected en bloc. Included also, was the lymphatic tissue, beginning at the bifurcation of the aorta and continued along the external iliac vessels. The obturator nodes and nerves, the hypo-gastric arteries and veins with their intra-pelvic tributaries were also included. The dissection was carried down to the muscular pelvic floor at the level of the levators. This entire mass of tissue was displaced down into the pelvis and attention again directed to reconstruction of the new urinary system.

The catheters were removed from the ureters. The isolated right colon and terminal ileum were brought down to the level of the sacral promontory and positioned so that the ileo-cecal valve faced anteriorly. The ureters were then implanted into the right colon by the Coffey 1 technic; the right ureter being implanted first. The new bladder thus formed of the right colon was sutured transversely to the posterior abdominal wall with a few interrupted sutures. The attached segment of terminal ileum was brought out near the right lateral angle of the incision, henceforth to serve as the new urethra. The sigmoid was brought out near the left lateral angle of the incision as a terminal colostomy. The pelvic floor was peritonealized, the new bladder serving to fill much of the defect. Two medium-sized cigarette drains were placed down at either end of the new bladder and brought out through the incision. The incision was closed in layers with interrupted sutures throughout. A Foley catheter was introduced into the new bladder. A dry dressing was applied.

The patient was placed in the lithotomy position and prepared and draped. An elliptical incision was made from the mons veneris to the cocyx, including the clitoris, labia-minora, labia majora, and anus. The ischio-rectal fat was also included. The muscles of the pelvic floor were divided high. The dissection was carried up behind the pubis and anterior to the coccyx and the specimen, including the entire vagina and external genitalia, was delivered from below. The perineal dissection presented little difficulty and took about 20 minutes. Hemostasis was then checked and secured by clamp and ligature. The huge cavity resulting was lined with large sheets of Gelfoam and then packed with 4 inch wide dry gauze. The perineal skin was partially closed with interrupted sutures.

The procedure took about 10 hours to complete. Ten pints of whole blood were given intravenously. It was estimated that this was considerably in excess of the blood loss. However, since considerable oozing of blood and serum from the pelvic defect could be expected for several days, it was felt that the excess blood, if any, would be a valuable reserve. The next morning the blood count revealed 3.79 million r.b.c. and 11.5 gms. Hbg.

The patient tolerated the procedure very well and at no time gave evidence of a fall of blood pressure to a degree which would cause alarm.

Pathologic examination of the specimen revealed that the dissection was wide of tumor and that the lymph nodes were negative. Postoperatively the patient did quite well although her initial urine output was scant and the BUN rose to 52. Because of the perineal packing and sutures she had a fair amount of perineal pain. On the 20th post-operative day her BUN was normal and so were her other chemistries.

At first it was expected that the patient would catheterize herself as needed, but this did not work out too well, partly because of partial prolapse of the terminal ileum serving as the urethra. Accordingly, a Foley catheter was inserted into the new bladder and the patient opens it when she feels a sense of distention. She does not leak urine except when the catheter becomes plugged with mucous. The sigmoid colostomy discharges feces once or twice daily and, rather curiously, the patient has ample warning of the event to repair to the toilet. She irrigates the colostomy about once every 2-3 weeks.

She appears quite satisfied and content with the arrangement. It should be noted that, aside from the Foley catheter, which is occasionally changed by her personal physician, she wears no colostomy bag or other form of prosthesis, a patch of gauze over the sigmoid colostomy being adequate protection. Besides the convenience of such an arrangement, there is an economic factor, for the cost of replacing Reutzen bags and buying the necessary rubber cement is not insignificant in lower income groups.

On August 8, 1951 the following laboratory data were reported: Hbg. 12.5 gms., RBC. 4.06 million, WBC 5,300, Plasma CO_2 55.1 volumes %, Plasma chlorides 590 mgms. %.

Since the patient will retains her libido an attempt was made to skin graft the remaining pelvic defect to form a pseudo-vagina. Besides the patient's desire on this score, it was considered worthwhile since it would reduce the healing time and provide an orifice for follow-up examinations. Only a partial "take" of the graft was obtained and the ultimate result is still questionable.

Summary

1. The philosophy and medical evidence supporting the principle of pelvic evisceration is discussed.

2. A case report of a patient subjected to this procedure with construction of a substitute urinary bladder and urethra in one stage is submitted.

3. A brief 4 month follow-up report is included. At the time of the writing the patient is clinically free of recurrence and states that she feels "much better" than she did before the operation.

REFERENCES

1. Brunschwig, A.: Cancer, 1: 177, 1948.
2. Gilchrist, R-K., Merricks, J. W., Hamlin, H. H. and Rieger, I. T.: S. G. & O. 130: 752, 1950.

NODULAR GOITER WITH BILATERAL MALIGNANT ADENOMATA

In A Nineteen-Year-Old Male

Edwin A. Mekanik, M. D.,*
and
Davis A. Baltz, M. D.,**
Wilmington, Del.

A disturbing surgical problem that has not received the attention we feel it warrants, occurred recently in this hospital and has prompted the following case presentation.

Two cases of carcinoma of the thyroid in young individuals have comparatively recently been observed. The more recent occurred in a 19-year-old white male, a deaf mute, who was admitted to the surgical ward service on 8-13-51 complaining of a "swelling" in his neck of at least 15 years' duration. He had been relatively asymptomatic until about six months before his admission when he noticed a progressive dysphagia associated with gradually increasing exertional dyspnea, palpitation, and almost constant headaches. In the month prior to his admission he had noticed a gradual diffuse enlargement of his thyroid gland. His past medical history was essentially non-contributory. Systemic review revealed only the above noted symptoms.

Examination showed a well developed young white male in no apparent distress. His temperature was 99.4, pulse 86, respiration 18. Eyes, ears, nose and throat were normal, chest clear to auscultation and percussion. Auscultation of the heart revealed a soft, systolic murmur at the base. Blood pressure was 120/86. Abdominal examination was negative. The principle findings were limited to the neck where a diffuse enlargement of the thyroid gland was present—the right more than the left, with a palpable diffuse lobulation over the isthmus measuring 7 cms. in diameter. A palpable bruit was present. No nodes were palpated in either side of the neck. It was the impression of the examiner that substernal extension was probably present. A BMR was reported as -5. The serology was negative—Rbc 4.73, Hgb 14.5, Wbc 9,250 with 57% segmented neutrophiles, 39% nonsegs, 3% monocytes and 1 esosinophile. The urine was within normal limits. Chest x-ray revealed a mediastinum normal in width and showed no evidence of a mass lesion extending down from the neck. The lung fields were clear and the heart shadow was normal in size and shape. The prevailing impression was that the patient had a non-toxic diffuse nodular goitre. On 8-13-51 exploration of the neck was carried out (DAB) and the findings were noted as follows: "The right and left lobes were diffusely enlarged, smooth and

---

*Asst. Resident in Surgery, Memorial Hospital.
**Chief Resident in Surgery, Memorial Hospital.

compressible, the right more than the left. The isthmus was replaced by a large smooth mass measuring 6 cms. in diameter.''

A resection of the left lobe and isthmus and a right sub-total thyroidectomy was done. The pathological report was as follows: ''Gross examination reveals excised thyroid tissue consisting of the whole of one lobe, the isthmus and what appears to be a portion of the other lobe—total weight 40 grams. On cut section the tissue has a pinkish color and is fairly dense in consistency and scattered in it are multiple small rounded nodules varying from 5 mm. to 1 cm. in diameter. The histological features present a variegated pattern. The thyroid tissue around the nodules noted in the gross is made up of normal appearing acini. The nodular structures show a variety of architecture. Some are composed of small, closely packed acini containing colloid; others, of acini containing no colloid; whilst in three of the nodules there is no apparent acinar structure, the cuboidal cells being arranged in sheets. In these nodules the nuclei of the epithelial cells are deeply stained. In addition, in these nodules the cells have infiltrated into the capsules surrounding them. No vein invasion can be made out, but at one point there is lymphatic extension. These nodules represent malignant adenomata of the thyroid gland.''

Because of the difficulties entailed in re-exploration of the neck so soon post-operatively, the patient was discharged on 8-21-51 after a satisfactory post-operative course and was again readmitted on 9-4-51. On 9-7-51 a right radical neck dissection was done (DAB) including the remaining right lobe of the thyroid. The post-operative course to date has been satisfactory. The pathologist's report on the second specimen was as follows: ''The specimen reveals in the gross examination, tissues from a radical neck dissection. Also accompanying the specimen is a rounded portion of thyroid tissue weighing 20 grams. Cut section of the thyroid tissue shows a large nodule lying within its substance which is apparently encapsulated and measures 1 cm. in diameter.

The nodule lying within the thyroid gland is made up of small thyroid acini, many of which contain no colloid, together with acinar epithelial cells which are arranged in clumps showing no evidence of true acinar formation. Around the nodule is an apparent capsule made up of thin fibrous tissue and the acinar cells are extending into this. No venous or lymphatic invasion is seen. No parathyroid tissue is seen. Sections of all the lymph nodes in the gross show a well marked sinus catarrh but no evidence of metastatic deposits.

Diagnosis: Malignant adenoma of thyroid gland.''

The patient is, at the time of this writing, fully recovered from his most recent operation and is awaiting the contemplated left neck dissection.

Although contributions by outstanding clinics to the current literature on thyroid disease have emphasized the importance of a more critical approach to the patient presenting the discrete adenoma of the thyroid, none have discussed in any detail the more pressing problem of extensive carcinoma involving all portions of the thyroid gland. This problem is even more pressing when it occurs in a young individual. Reports from the clinics having extensive experience have stressed the malignant potentialities of the solitary nodule in the thyroid gland. It has generally been accepted that a more inclusive operation, lobectomy, should be the procedure of choice when the adenoma is confined to one lobe and there is no clinical evidence of metastatic disease beyond the gland. Difference of opinion does exist when, microscopically, malignant change is demonstrated in the adenomatous nodule. Some authorities have insisted on prophylactic neck dissection on the ipsilateral side even though evidence of capsule or vessel invasion is not present. Others feel that a ''watch and wait'' policy is justified, especially since contralateral spread is not infrequent. When spread of tumor beyond the confines of the adenoma is demonstrated, there is unanimity of opinion that radical neck dissection is a *sine qua non*, provided distant spread is not demonstrated.

Although carcinoma in the multinodular thyroid has not received the attention recently as has the solitary nodule, incidence of carcinoma in the multinodular non-toxic gland is sufficient enough to warrant clinically the same index of suspicion. Cole, in a review of the incidence of carcinoma of the thyroid gland, found 9.8% occurring in the multinodular non-toxic gland. Colcock, in reviewing over 27,000 cases of thyroid disease seen at the Lahey Clinic, states that in their experience only 0.62% of multinodular goiters were found to have carcinoma. Both authors agree that men with the disease are more likely to have malignant change present. When the disease occurs in a young individual, the likelihood of malignant change being present is still more probable Kennedy found malignant disease present in 19.3% of 62 children under the age of 14 and Ward in a smaller series found more than 40% of children under the age of 15 to have malignant disease present. A review of current and past literature indicates that all varieties of carcinoma have been found in children notwithstanding their youth.

Malignancy in the thyroid gland has been conveniently classified by Warren into the following groups:

Group I Low or Potential Malignancy
1. Adenoma with Blood Vessel Invasion
2. Papillary Cystadenoma with Blood Vessel Invasion

Group II Moderate Malignancy
1. Papillary Adenocarcinoma
2. Alveolar Adeno Carcinoma
3. Hurthle Cell Adenocarcinoma

Group III High Malignancy
1. Small Cell Carcinoma (Carcinoma Simplex)
    a. compact type
    b. diffuse type
2. Giant Cell Carcinoma
3. Epidermoid Carcinoma
4. Fibrosarcoma
5. Lymphoma

Group I constitutes the largest group and includes the adenomas and papillary cystadenomas. If they show capsule or blood vessel invasion, grossly or microscopically, they are classified as malignant. Of these, the embryonal or fetal adenomas are most prone to show this type of invasion. The degree of neoplastic activity is indicated by the usual criteria of mitoses, architectural disorganization, and infiltration of surrounding tissues. Papillary cystadenocarcinomas arising from so-called aberrant thyroid tissue are today generally considered to represent metastases from small non-palpable primary cystadenocarcinomas of the thyroid gland.

Metastatic spread of the malignant adenomas and papillary cystadenocarcinomas occurs most frequently through blood vessel invasion. Papillary cystadenomas usually metastasize to the regional nodes first. These invasions may occur slowly and metastases have been reported 5 years after excision. If the thyroid is totally invaded, regional lymph node metastases will be bilateral. Lymphatic chains along the larynx, trachea and external jugular vein are commonly invaded with later extension to the submaxillary, supraclavicular; mediastinal and retrosternal node areas.

The moderately and highly malignant carcinomas (Groups II and III) represent a much smaller group as a rule. The undifferentiated carcinomas are characterized by rapid growth and early metastases. Primary fibrosarcoma of the thyroid gland is very rare Generally, tumors of a high degree of malignancy show rapid and diffuse local invasion. Although regional lymph nodes, lungs, bone (clavicle, skull, sternum) liver, kndneys and brain, in respective order, are mentioned as the most common sites of metastases, spread of tumor may involve the recurrent laryngeal and vagus nerves, subcutaneous tissues, and muscles. The trachea and esophagus have also been invaded with subsequent edema and ulceration.

In this particular case of thyroid carcinoma, the decision for the radical approach was influenced by several factors, the most important being the microscopic evidence of capsular and lymphatic invasion. This, combined with the incomplete removal of the right thyroid lobe, was adequate indication for a complete extirpation of all remaining thyroid tissue, overlying muscles, and all tissue included in a radical neck dissection. It was felt, moreover, that the left neck should also be completely dissected, since there was definite evidence of a similar degree of involvement in the left lobe.

If the decision for radical treatment of this disease is made, an adequate operation must be carried out. This should always include the entire sternomastoid muscle, internal jugular vein, and all the fatty areolar and lymphoid tissue from the trapezius muscle laterally, the mid-line medially, the clavicle below and the mandible above. Included in the specimen should be the submaxillary gland, lower portion of the parotid gland, omohyoid muscles, prethyroid muscles, end both submental nodes. The digastric and stylohyoid muscles may be left in place if desired.

There need be no hesitation in performing this operation bilaterally if the precaution of staging the procedures is taken. Three to five weeks is adequate to eliminate any serious difficulty. The increased spinal fluid pressure and swelling of the face is transitory and does not cause any permanent damage.

Summary

A case history of carcinoma of the thyroid in a 19-year-old deaf mute with subsequent treatment by total thyroidectomy and radical neck dissection is presented.

The significance of single and multiple adenomas of the thyroid gland is indicated.

Conservative versus radical management of carcinoma of the thyroid is discussed together with the treatment of the single, apparently benign adenoma.

The rationale for radical treatment in the case reviewed is presented.

REFERENCES

Ackerman, L. V. and Regato, J. A.: Cancer, Diagnosis, Treatment and Prognosis. St. Louis: C. V. Mosby Company.

Barton, McSwain, Walker and Divelly: Malignant Tumors of the Thyroid Gland, Surgery, 23: March, 1948.

Clute, H. M. and Warren, S.: The Prognosis of Thyroid Cancer, S. G. O. 60: 861-874, 1935.

Cole, W. H., Slaughter, D. P. and Majarakis, J. D.: Carcinoma of the Thyroid Gland, S. G. O. 89: Sept. 1949.

DeCourcy, J. L. and DeCourcy, C. B.: Pathology and Surgery of Thyroid Disease.

Lahey, F. H., Hare, H. F. and Warren, S.: So-called Lateral Aberrant Thyroid Tumors, S. G. O. 74: 991-1001, 1942.

Lahey, F. H.: Carcinoma of the Thyroid, Ann. Surg., 112: 977-1005, 1940.

Lahey, F. H., Hare, H. F. and Warren, S.: Ann. Surg., 112: 977, 1941.

Lahey, F. H.: S. G. O. 82: 705, 1946.

Lange, H. J. and MacLean, K. F.: Malignant Neoplasms of the Thyroid, Surgery, 26: Nov. 1949.

Pemberton, J. J. and Lovelace, W. R.: Surg. Clin. No. Amer., 21: 1037, 1947.

Ward, G. E., Hendrick, J. W. and Chambers, R. G.: Carcinoma of the Thyroid Gland, Ann. Surg., 131: 4.

MISCELLANEOUS

1951 DIABETES DETECTION DRIVE

Diabetes Week (November 11-17) will again spearhead the American Diabetes Association's nationwide Diabetes Detection Drive—the fourth sponsored by that Association.

The year-round Diabetes Detection program, approved by the American Medical Association, is the only broad health education and case finding program developed exclusively by the medical profession. Its objectives are twofold: (1) to further the detection of diabetes among the public; and (2) to disseminate general information about the disease.

Twenty-eight state medical societies, over 500 county medical societies, and our 28 affiliate associations, have already established Committees on Diabetes. In Delaware, in addition to the State Medical Society Committee, head by Doctor Lewis B. Flinn, two county medical societies will cooperate this year.

The high cost of meats need not force people to cut down the amount of protein they eat, since less expensive but equally nutritious meat substitutes are easily available, according to an article in the September issue of the *A.D.A. Forecast*, America's only national magazine for people who have diabetes.

Written by the *Forecast's* dietary expert, Deaconess Maude Behrman of Philadelphia's Lankenau Hospital, the article presents a list of protein-rich foods other than meat, and gives the quantities in which each one equals one ounce of meat in protein value. A quarter of a cup of cottage cheese, for example, equals an ounce of beef, lamb or pork. Other substitutes listed run the gamut from oysters to eggs, from peanut butter to sardines.

While Deaconess Behrman makes it clear that nothing really can substitute—in taste—for a good thick steak, she does offer three selected recipes using meat substitutes which really make the mouth water. She also points out that for diabetics, to whom any reduction in protein intake could easily cause trouble, the small cans of diced meats for babies provide excellent single-person portions of protein. They should be particularly useful for diabetics living alone, and for those in families who use non-protein meat substitutes. The *A.D.A. Forecast*, in which Deaconess Behrman's article appears, is a bimonthly magazine published in the interests of diabetics everywhere by the American Diabetes Association, Inc., at 11 West 42nd Street, New York 18, N. Y. First published in 1948, it has by now a circulation of nearly 20,000 readers.

The September issue also carries a "personal history" written by Hamilton Richardson, the Junior tennis champion, which tells delightfully about his tennis, his diabetes and his future plans. "Ham" Richardson is one of the country's outstanding younger tennis stars; he has swiftly made his way up in this arduous competitive sport at the same time that he has been fighting his winning battle for control over his diabetes. He tells his story with all the grace and pace with which he plays tennis.

Arthur R. Colwell, M.D., Chairman of the Department of Medicine at Northwestern University Medical School and this year's President of the American Diabetes Association, writes a simple and practical description of "The Types of Insulin", which will give diabetics and nondiabetics alike a clear idea of the varying uses of the four major types of insulin currently on the market. A highly informative article called "When Diabetics Plan Employment", by Herman O. Mosenthal, M.D., a Past President of the Association, gives a number of useful tips to diabetics who are either job hunting or else are trying to improve themselves by finding better positions. Dr. Mosenthal points out that many people still assume, quite incorrectly, that a diabetic is a "sick person". A well-controlled diabetic is actually as employable as a nondiabetic except for a few hazardous types of work.

A charming autobiography, "Insulin and a Richer Life", by monologist Josephine Poore, a diabetic for over twenty-two years, completes the major features in the September *A.D.A. Forecast*. A new department, "The Funny Side", contains three amusing anecdotes told by diabetics about themselves; this department is open to all comers who have entertaining stories to tell about diabetes, whether the teller is a diabetic or not. The *Forecast* Editors will pay $10.00 for every anecdote used.

"Dave's Diary", the anonymous adventures of a young diabetic that runs in every issue of the *Forecast*, tells this time of his experiences at a wedding reception. There is an illuminating picture series showing the major components of a balanced diet—sound and sensible information for nondiabetics as well as diabetics. The usual correspondence column and the Questions and Answers Department, containing medically sound answers to queries from *Forecast* readers about diabetes, completes the issue.

Single copies of the magazine may be obtained from the offices of the American Diabetes Association, 11 West 42nd Street, New York 18, N. Y., at 35c. Annual subscriptions for six issues are $2.00; a two-year subscription is $3.50; and a three-year subscription $4.75.

There is a small, lonely grave in an old, forgotten cemetery in Graniteville, S. C. marked only "The Little Boy, October 1855". It haunted John F. Watlington of Charlotteville, N. C., a public spirited citizen who headed the Community Chest drive this year. His inquiries revealed that "The Little Boy" traveling alone on a train through Graniteville, became ill and was taken off the train. A kindly family gave him refuge, but within a few days he died. No one had learned his name or where he came from or where he was going, but sympathetic townsfolk put up the marker. "It just couldn't happen today," Mr. Watlington said when he uncovered the story. "Travelers Aid, a Red Feather service, would be on hand to help the little boy; to see that he had prompt medical and nursing care; perhaps to ease some family trouble that may have lain behind the little boy's tragic journey."

Philip Morgan of Worcester, Mass., is the fourth United States citizen to receive the national Red Feather medallion for distinguished service from Community Chests and Councils of America, Incorporated. Previous winners have been Gerard Swope of Ossining, N. Y., H. J. Heinz, of Pittsburgh, Pa., and E. A. Roberts of Philadelphia.

Editorials

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twenty-fifth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building
Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place
M. A. Tarumianz, M. D. ....Assoc. & Managing Editor
Farnhurst, Del.

Vol. 21 October, 1951 No. 10

The 1951 Meeting

The 162nd Annual Session of the Medical Society of Delaware was held at the Hotel Du Pont, Wilmington, on October 8-10, 1951, President Charles E. Wagner of Wilmington, presiding.

The meeting of the House of Delegates was notable for the dispatch with which its transactions were handled, several of the reports involving routine statistics being read by title. The main business of the evening was the reading and tentative adoption of the four Amendments to the By-Laws, as printed in The Journal for August, 1951. The full Transactions will be printed in the December issue of The Journal.

The scientific meetings proceeded exactly as printed in the September Journal, every scheduled essaying being present. These papers were of a high order, and were well received and adequately discussed.

The elections for the year 1952 resulted as follows:

President, Ervin L. Stambaugh .... Lewes
President-elect, Victor D. Washburn, Wilmington
Vice-President, John B. Baker .... Milford
Secretary, Andrew M. Gehret .... Wilmington
Treasurer, John M. Messick .... Wilmington
Delegate to A. M. A., L. L. Fitchett .... Milford
Alternate to A. M. A., H. T. McGuire .... New Castle
Rep. to D. A. M., W. Oscar La Motte, Wilmington

The Woman's Auxiliary met at the Delaware Academy of Medicine and the duPont Country Club, under the Presidency of Mrs. Douglas M. Gay, of Wilmington. A business session on October 9th was followed by their own luncheon, attended by 86 members and several guests. On October 10th, at another business session the following officers for 1951-1952 were elected and installed:

President, Mrs. Sylvester W. Rennie, Wilmington
President-elect, Mrs. Willard F. Preston, Wilmington
Vice-President, Mrs. Carleton M. Fooks .... Milford
Recording Sec'y, Mrs. John B. Baker ...... Milford
Corresponding Sec'y, Mrs. Edward T. O'Donnell, Wilmington
Treasurer, Mrs. Lawrence L. Fitchett .... Milford

The social events were particularly pleasant. Preceding the meeting of the House of Delegates President Wagner and A. M. A. Delegate Beebe gave a reception and dinner in honor of A. M. A. President John W. Cline, of San Francisco, (who also made brief addresses before the House of Delegates and the Woman's Auxiliary) and the officers and chairmen of committees. Following the House there was a social hour for the members present. The luncheon by the New Castle County Society on October 10 was attended by 104 guests, and that given by the State Society was attended by 91 guests. The main social event was the reception and dinner on October 9, which was attended by 163 persons and was addressed most illuminatingly by President Cline.

The technical exhibits again set a new record for number and income, there being 32 exhibitors occupying 34 booths. With the expansion of the Society's activities and the increasing costs thereof the Society is becoming more and more dependent upon the financial success of its technical exhibit to make its convention expenses balance. Our exhibitors this year seemed pleased with the arrangements made for them, and several stated they would be with us again next year at Rehoboth.

The registration was as follows:

Members	157
Guests, Visitors, etc.	33
Residents, Internes, etc.	25
Exhibitors	61
Medical Society	276
Woman's Auxiliary	99
Total	375

The membership registration, 157 of a total of 327, was 48%, which we believe is about the national average for a state medical convention.

So passes into history the 1951 Session. Now let us turn our faces toward Rehoboth and make the 1952 Session an even better one.

Too Many Meetings

We have before us notices of staff meetings, clinical-pathological conferences, departmental meetings, etc., from several hospitals. We have in mind also that there are meetings of the State Medical Society, the County Medical Society, the Delaware Academy of Medicine, the Delaware Academy of General Practice, special group meetings chiefly concerned with the various specialties, state, regional and national meetings of various types, and finally the two annual meetings of the American Medical Association. It takes no Solomon to see that this business of medical meetings, some of which must be attended under various penalties, has reached the point of absurdity, and that something must be done about it, and soon. It will take time to evolve proper changes in the national, regional and state meetings, but at the local level something can be done immediately.

It is our suggestion that the four hospitals of Wilmington should combine their monthly staff scientific meetings, and have separate business meetings a couple of times a year only. This fusion of staff meetings and clinical-pathological conferences will eliminate much of the present day duplication, and with little or no loss of educational value to hospital staff members. The demand today upon the doctor's time is so great that any reasonable proposal that would alleviate the hardships now imposed upon staff doctors should be welcomed.

Wanted—Book Reviews

The Journal receives for review a goodly number of books throughout the year on medicine and subjects related thereto. Several of the older members who in the past could afford the time to review books now find they cannot do so. The Journal would like some of the younger men to take up this burden.

To review a book competently calls for a rather full knowledge of the subject, especially its recent advances; for the ability to evaluate the contents as compared with the objectives stated in the preface; and for the ability to express the reviewer's opinion of the book clearly but briefly. If any of our members are interested in doing this kind of work, please contact the Editor. For the trouble in submitting an acceptable review within thirty days the reviewer may keep the book.

BOOK REVIEWS

Handbook of Nutrition. Second Edition. Prepared by the Council on Foods and Nutrition, American Medical Association. Pp. 717, with 7 charts, 28 tables, and 35 figures. Cloth. Price, $4.50. Philadelphia: Blakiston Company, 1951.

This is a collection of articles originally appearing in the *Journal of the A. M. A.* prepared by 33 selected authors under the auspices of their Council on Food and Nutrition. The articles are grouped into sections as Individual Nutrients, Nutritional Needs, Nutritional Deficiencies, and Food and their Nutritional Qualities.

The consideration given to proteins, fats and carbohydrates is concise and elementary, which is possibly desirable for a handbook of this type. The chapter on iron and copper "is intended to supplement, not to supersede" the discussion on iron in nutrition contained in the first edition of the "Handbook of Nutrition." The chapter on iodine is exceptionally readable and informative to the physician.

The statement "it cannot be said at this time that fluorine is an essential trace element even for purposes of dental health" is surprising to the reviewer.

The Food and Nutrition Board of the National Research Council avoids the terms "standards" and "requirements" and prefers "allowances" to describe recommended amounts of dietary factors for human nutrition. These allowances are well above the average of measured minimum requirements so as to provide a nutritional safety factor. When this fact is remembered by the clinician, he need not be puzzled by the paucity of recognizable nutritional disease states in patients who obviously consume less than the "recommended allowances." Many of the allowances are understandably on the high side through distrust of the known compounded with fear of the unknown.

The handbook re-emphasizes such facts as (1) a good diet of common foods furnishes all nutritional needs except for vitamin D in the person receiving little sunlight; (2) milk is difficult to replace as a food due to its richness in calcium; (3) obesity from an oversupply of calories is a more serious health problem than are all the various rare nutritional deficiencies combined in the North American society.

The chapter on fluid therapy and the chapters on vitamins and minerals stand out for their clarity and special usefulness to the practicing physician.

A Textbook of Medicine. Edited by Russell L. Cecil, M. D., Professor of Clinical Medicine, Emeritus, Cornell University, and Robert F. Loeb, M. D., Bard Professor of Medicine, Columbia University. 8th edition. Pp. 1627, with 204 figures and 40 tables. Cloth. Price, $12.00. Philadelphia: W. B. Saunders Co., 1951.

This eighth edition of a well-known American text book stresses the physiologic, biochemical, and psychologic aspects of disease. New items discussed by competent authors include, among others, Q fever and Rickettsialpox, carbon tetrachloride and beryllium poisoning, and a discussion of diseases of collagen. The interesting and recently recognized hereditary disease wherein mental deficiency (imbecility or idiocy) is associated with the urinary excretion of phenylpyruvic acid (phenyl ketonuria) is described.

The study of viral diseases has led to a list of 51 different infectious diseases of man believed to be due to viruses. The fine discussions of pneumococcal infections, tuberculosis, syphilis, and malaria deserve special mention.

The section on diseases of collagen covers disseminated lupus erythematosus, dermatomyositis, periarteritis nodosa, and scleroderma.

Some duplication is occasioned by the arrangement of the text. For example, Friedlander's bacillus pneumonia is discussed under bacterial pneumonias, page 127, and again under Friedlander's bacillus infections, page 303.

In the section on amebiasis is the statement "symptoms of mild amebic colitis are almost identical with those of mucous colitis." The reviewer considers the continued use of the poor term "mucous colitis" to be undesirable in medical textbooks.

The material is up-to-date. This single volume contains much information concisely presented. The changing science and terminology of medicine demands a rapid turn-over in a physician's library and in his vocabulary. What was once the Bacillus typhosus became Eberthella typhosa and currently is Salmonella typhosa!

Spatial Vector Electrocardiography, By Robert P. Grant, M. D., National Heart Institute, Bethesda, Md., and E. Harvey Estes, Jr., M. D., U. S. Naval Hospital, Bethesda. Pp. 149, with 41 figures. Cloth. Price, $4.50. Philadelphia: Blakiston Company, 1951.

This small, well written book gives the student of electrocardiography the fundamentals of objective and logical, as opposed to empirical and arbitrary, interpretation of electrocardiograms.

Purposely, a minimum of mathematics and electrophysics is included, but the reader will require the exercise of some graphic imagination in order to visualize the tri-dimensional figures and their vectors.

The controversy over unipolar and bipolar leads is dissolved when one visualized that the unipolar limb leads simply give a slightly different triaxial reference figure. Another misconception that is corrected concerns the notion that the precordial lead which records the transitional QRS complex overlies the septum. Actually it does not, and by correctly visualizing the transitional pathway for the QRS complex, one can understand that every individual has regions where a Q wave and negative T wave can be written.

Admittedly, this is not intended as a new method of interpreting electrocardiograms; rather, its purpose is to give meaning to the patterns which until recently have been memorized blindly. The authors are to be congratulated on achieving their expressed goal.

Let's Cook It Right. By Adelle Davis, B. A., M. S. Pp. 626. Cloth. Price, $3.00. New York: Harcourt, Brace and Company, 1947.

The physician will profit greatly by reading and studying this very pleasantly written book on the preparation of food in the home.

The author gives many recipes and explains the scientific reasons for the method of cooking, for the seasoning, and the balancing of the daily diet. The section of the book which is different from the stereotyped "cook book" is that part which gives the fundamentals of nutrition as they apply to cookery, and how to build health through applied nutrition. The type of kitchen equipment and the best way of using it is also well described.

The lay person will find this a very useful book in arranging the daily menus with the idea in mind of gaining the most nutrition for the money spent. Also, in accomplishing the threefold purpose of food, which is, according to the author, "to bring delight to the senses of taste, smell and sight; to produce health; and to provide opportunity for artistic expression."

This book will aid the physician in giving proper advice to the ever increasing number of patients who suffer from symptoms of exhaustion resulting from inanition brought about by their unbalanced diet. No one can deny that good health can come from good cooking.

Let's Have Healthy Children. By Adelle Davis, A. B., M. S. Pp. 314. Cloth. Price, $3.00. New York: Harcourt, Brace and Company, 1951.

The author of "Let's Cook It Right" gives an excellent account in "Let's Have Healthy Children" of how the daily diet balanced in its protein, fat, carbohydrate, mineral and vitamin content, properly prepared and regularly eaten, will eventually result in healthy mothers and healthier children.

The value of good dieting before and during pregnancy and continued throughout the growth of the child, is discussed. Mothers and physicians will find the suggestions for feeding the "problem" children very valuable. The physician well knows that many of the feeding problems in infants and children are not due to the "wrong food, improperly prepared" but to the psychological problems of the parents.

The book consists of twenty-two chapters and a complete index. Many tables are given showing food values in calories, minerals and vitamins.

Physicians, dietitians, and parents will find this book very helpful.

Clinical Pediatric Urology. By Meredith Campbell, M.D., Professor of Urology, New York University Post-Graduate Medical School. With a Section on Nephritis and Allied Diseases in Infancy and Childhood; by Elvira Goettsch, M.D.; and John D. Lyttle, M.D. P. 1113, with 543 figures. Cloth. Price $18.00. Philadelphia: W. B. Saunders Company, 1951.

Campbell's recent book fills a long felt need of all medical men dealing with children. Of the few men with wide experience in the pediatric urological field Campbell leads the field.

The dedicatory caption is worthy of note: "To the countless thousands of urologically handicapped children" while another pertinent statement emphasizes: "Even the newborn infant can now be given the full benefits of complete urologic examination, diagnosis and urosurgical treatment exactly as is customarily employed when the patient is an adult."

A rather hasty review of this most complete volume reveals few omissions and these are of recent procedures, for instance, Howard May's operation for epispadias and Magamatsu's osteoplastic flap for better exposure of large renal tumors, the adrenals and for retroperitoneal dissection.

His advocacy of sodium sulphate as a diuretic agent in the treatment of anuria will not be generally accepted, and his pessimism regarding the artificial kidney is no longer tenable.

A wise and valuable addition to his book is the chapter on Nephritis and Allied Diseases in Infancy and Childhood. The urolographic material is unsurpassed and the book is replete with illustrations. This book will be widely used.

Handbook of Medical Management. By Milton Chatton, M. D., Sheldon Margen, M. D., and Henry D. Brainard, M. D. Second Edition. Pp. 507. Paper. Price, $3.00. Palo Alto: California University Medical Publishers, 1951.

This little book does not merely outline diseases; each disease is well discussed and the most up-to-date treatment is given. There are twenty-two chapters, an Appendix of commonly used tables, and a complete index. Very practical tables and charts are included.

The code numbers of the 1942 edition of "Standard Nomenclature of Diseases and Operations" are used with each disease.

This book is highly recommended for the busy practitioner.

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 11

NOVEMBER, 1951

Per Year, $4.00
Per Copy 50c

THE OFFICE MANAGEMENT OF DIABETES[*]

Perry S. MacNeal, M. D.,[**]
Philadelphia, Pa.

Definition. Diabetes mellitus is a syndrome characterized by a quantitative impairment of carbohydrate metabolism. The degree of this impairment varies widely from patient to patient. In some the impairment is so slight that it can be detected only by glucose tolerance tests, while in others the inability to metabolize carbyhydrate becomes almost "total."

Etiology. The causes of diabetes mellitus are multiple. In somewhat less than half of the patients there is, at autopsy, a demonstrable organic disease of the pancreas. This usually takes the form of a hyaline fibrosis of the Islands of Langerhans, but patients whose pancreas has been destroyed by neoplasm, hemochromatosis, recurrent infection, or surgical intervention may develop the disease. In many patients no lesion in the pancreas can be demonstrated. The disease in some of these cases is apparently due to a hyperfunction of the anterior pituitary gland with an excessive secretion of the "diabetogenic hormone."

Heredity plays an important part in creating the substrata upon which the actual symptom complex may develop. This characteristic is apparently transmitted as a Mendelian recessive character and a familial history of diabetes can be demonstrated in about forty percent of patients suffering from the disease.

Frequently there seems to be a precipitating cause which brings to the clinical horizon the previously undetected disorder. Among such precipitating causes any change which increases the total metabolism of the body (except physical exercise), such as febrile infection, thyrotoxicosis, pregnancy, or obesity must be considered.

A syndrome which is difficult to distinguish from diabetes mellitus may develop in patients with organic disease of the liver: Laennec's cirrhosis, or fatty infiltration.

The abnormal physiology of the disease is apparently made up of many factors. There is an increased production of carbohydrate from protein catabolism as well as a decreased ability to store glycogen. In addition, the ability of tissue cells to utilize glucose is impaired. The exact action of insulin in combating this disorder is not entirely understood, but apparently it facilitates combustion of glucose by tissue cells, storage of glycogen, and perhaps it inhibits the formation of carbohydrate from protein sources.

Symptoms. The symptoms of diabetes vary depending upon the severity of the condition. Generally speaking, these symptoms will fall into three groups, which, for practical purposes, we will discuss separately.

1. Mild diabetes (glycosuria of obesity or "non-insulin requiring" diabetes). This disease is entirely limited to adults and is characterized by an insidious onset. The first symptom of which the patient is aware may frequently be the occurrence of some complication such as peripheral vascular failure with gangrene of the toe, cerebral thrombosis, myocardial infarction, diabetic retinitis, etc. These patients are always overweight and, even under the influence of their diabetes, they will not lose weight down to or below their ideal standard weight. However, in spite of a large appetite these obese patients may lose moderate amounts of weight as the amount of sugar excreted in the urine becomes excessive. Likewise there may be minor degrees of polydipsia and polyuria. It is not uncommon for this type of patient first to be discovered in the practice of a gynecologist, where they have gone for treatment of pruritis vulvae. The

---

[*] Read before the Medical Society of Delaware, Wilmington, October 9, 1951.

[**] Physician to Pennsylvania Hospital.

LIBRARY OF THE
COLLEGE OF PHYSICIANS

constant excretion of sugar-bearing urine provides an excellent medium for the growth of yeasts and these in turn set up a pruritic vaginitis. This type of disease may also be accompanied by a sense of general weakness, morning headache, lack of pep, and "sluggishness." Clinical acidosis does not occur in these patients except in the presence of some complicating factor such as febrile infection, thyrotoxicosis, pregnancy, etc.

2. Moderately severe diabetes (stable, insulin requiring diabetes). This disease occurs in adults, usually manifesting itself between the third and fifth decades. Here the classical symptoms of diabetes occur; namely, polydypsia, polyphagia, polyuria, and weight loss. This type of patient, if the diabetes is allowed to continue uncontrolled, will lose weight below his ideal standard weight under the influence of his diabetes, even though his caloric intake may be excessive. Again, however, the development of symptoms is quite insidious. Thus there may be a more or less gradual loss of weight without other symptoms over a period of some months before the situation is brought to the attention of a physician. Occasionally in this type of patient also the first medical consultation may be sought because of a complicating factor such as gangrene.

3. Severe diabetes (juvenile diabetes, unstable insulin requiring diabetes). This disease may occur either in adults or children, but practically all children who have diabetes fall into this group. It is characterized by a rapid and dramatic onset of symptoms with polydypsia, polyuria, polyphagia, and extreme weight loss. It is not unusual for patients suffering from this condition to lose weight at the rate of three to five pounds per week. If help is not sought promptly acidosis will occur rapidly and it is not unusual for these patients first to come to the attention of a physician when acidosis is already well established. It is likewise characteristic of this condition that, once a program of regulation has become established, strict adherence to the program is absolutely essential. Minor variations in insulin dose or in food intake produce dramatic changes in the carbohydrate metabolism.

Physical Findings. There are no pathognomonic physical signs of uncomplicated diabetes mellitus. However, evidences of premature arteriosclerosis, the typical funduscopic picture of diabetic retinitis, premature cataracts, and excessive obesity are indications for laboratory study of the carbohydrate metabolism. In the differentiation among the three different types of diabetes mentioned above the physical habitus of the patient may be quite helpful. Thus the mild diabetic is always overweight and is usually beyond the third decade of life. The severe diabetic has usually lost large amounts of weight in the immediate past and may show signs of dehydration and vitamin deficiency in addition to the general malnutrition. These patients likewise are almost always in a younger age group.

Diagnosis. Analysis of the urine for sugar should be part of the routine workup of every medical patient. Frequently diabetes, especially of the mild type, may be symptomless or at least give no *specific* symptom for many months or years. It is quite common for the discovery of this illness to be made entirely by accident during routine examinations. In this mild type of diabetes it is quite common for the urine to be free of sugar during the post-absorptive state, and it is therefore wise to collect specimens for this purpose late in the evening after a day during which the diet has been high in carbohydrate. The moderately severe and severe diabetic patients will show glycosuria throughout the twenty-four hour period so that this precaution is not as important here.

The reduction of Benedict's solution is not in itself pathognomonic for diabetes mellitus since the following conditions may also cause it:

1. *Renal glycosuria.* Glomerular urine normally contains sugar in exactly the same way as it contains all other dialyzable substances found in the blood plasma. In normal people, however, this glucose is reabsorbed as the urine passes down the tubule so that no sugar appears in the bladder urine. In some people the ability of the tubules to reabsorb glucose is distinctly impaired and in these persons, even though the amount of sugar in the blood is not excessive, sugar may appear in the urine.

2. *Alimentary glycosuria.* In this condi-

tion sugar appears in the urine after the excessive ingestion of carbohydrate. In this situation the amount of sugar appearing in the glomerular urine is more than can be reabsorbed by the tubules and therefore some of it is still present at the time the urine reaches the bladder.

3. *Emotional glycosuria.* The exact mechanism of this is not entirely understood but it is quite possible that under the influence of excitement sufficient epinephrine is released into the blood to increase the rate of glycogenolysis thus elevating the blood sugar temporarily.

4. *Lactosuria.* During *lactation* it is not uncommon for sufficient amounts of lactose to be excreted in the urine to produce a positive Benedict's test. However lactose is not fermented by yeast so that the Benedict reaction will be positive both before and after such fermentation has taken place. If the sugar is glucose the test will be positive before fermentation with yeast but negative afterward.

In order to differentiate among these causes of glycosuria blood studies are essential. In the more severe cases a single blood sugar may suffice to clinch the diagnosis. Thus if the blood sugar level is over 200 mgm. per cent and the patient has been without food for ten hours, the diagnosis of diabetes mellitus is practically certain. Hyperglycemia of this degree may occasionally be seen due to cerebral damage. However there are many patients in whom the impairment of carbohydrate metabolism is of lesser degree so that the blood sugar may approach normal when the patient has been without food. In these patients a glucose tolerance test may be necessary in order to establish the diagnosis.

Since it is well known that the diet during the days immediately preceding the glucose tolerance test will effect the result, it is essential that the composition of this diet be standardized. It is our custom to have the patient eat 300 grams of carbohydrate, 100 grams of protein, and 100 grams of fat as a minimum daily diet for three days before the test is to be run.

The actual technique of the standard glucose tolerance test calls for the administration of 100 grams of glucose by mouth after a twelve hour fast. (In children this dose should be modified to 1.8 grams per kilogram of body weight). A sample of blood is drawn for the determination of fasting blood sugar and the glucose is then administered by mouth. Blood samples are then drawn at intervals of one half hour, one hour, two hours, and three hours. This number of samples is always sufficient for the accurate diagnosis of diabetes mellitus.

In the normal patient the fasting blood sugar level will always be between 60 and 120 mgm. per cent. At the end of one half hour this may rise to 150 to 180 mgm. per cent, and this level may be sustained at the one hour interval. However by two hours the blood sugar level will always have returned to a normal figure. If this has not occurred then the glucose tolerance is said to be decreased and at least some impairment of glucase metabolism is present. In the obese, mild, non-insulin requiring diabetic it is not uncommon for the fasting blood sugar to be within normal limits but there will always be some degree of delay in its return to normal. In the severe juvenile type of diabetic the fasting blood sugar will be elevated and there will be a continuous rise during the three hours after the administration of glucose. Urine specimens should be collected at the same intervals as the blood specimens are taken in order to evaluate the "renal threshold" of each patient. There may be transient episodes of glycosuria during the test even in the normal person and these represent the so-called alimentary glycosuria.

As a screening procedure a much simpler test is eminently satisfactory. Thus it is our custom to give the patients 100 grams of glucose in solution in the fasting state and then draw a blood sugar two hours later. If this specimen is below 130 mg.% the diagnosis of diabetes mellitus has been excluded. If it is above 130 mg.% a full scale glucose tolerance test is indicated. This eliminates three unnecessary blood sugar determinations and makes it reasonably practical to survey every new patient for the possibility of diabetes mellitus.

It should be re-emphasized that these tests will demonstrate whether or not there is a definite impairment of carbohydrate metabolism. However they should not be relied upon entirely to determine the extent of that impairment. Thus the differentiation between mild, non-insulin requiring diabetes and the severe juvenile type should be made on clinical grounds rather than upon the basis of a glucose tolerance test. The history in reference to the degree of weight loss and the occurrence of the classical symptoms of polydypsia, polyuria, and polyphagia will be of more help in deciding the severity of the disease than the glucose tolerance test.

Treatment. The treatment of a patient with diabetes mellitus should be so designed that the following goals will be achieved:

1. *The body weight shall be normal.* For this purpose the tables of standard height, weight, and age should be used with the exception that patients over thirty-five years of age should maintain the weight given as standard for age thirty-five. Variations of ten per cent plus or minus may be allowed depending upon the body habitus.

2. *The fasting blood sugar level shall be normal.* This goal may occasionally be very difficult of achievement and some concessions may have to be made. In the patient who does not require insulin this rule must be strictly enforced. However in the patient who is taking moderate or large amounts of insulin and whose diabetes is unstable it may be preferable to allow the fasting blood sugar to be slightly above normal (150 mgm.%) in order to prevent the frequent hypoglycemic spells to which these patients are sometimes subject. This is especially important in the middle-aged person in whom arteriosclerosis has already begun to develop since the occurrence of hypoglycemia may produce dangerous vascular disorders in the brain and in the myocardium. However, with these exceptions, every effort should be made to maintain a normal fasting blood sugar level in order to prevent the increased tendency toward arteriosclerosis, the decreased resistance to infection, the tendency towards skin complications and diabetic retinitis which hyperglycemia produces.

3. *The urine throughout the day shall be sugar-free.* The same general consideration as pertained to the fasting blood sugar should be kept in mind here. If complete aglycosuria cannot be achieved without running the risk of hypoglycemia it may be permissible to allow small degrees of glycosuria. However this consideration should not relieve the physician of the responsibility of a conscientious attempt to maintain a sugar-free urine.

4. *Hypoglycemic spells must not occur.* The dangers of a single spell of hypoglycemia are mostly dependent upon the time and place of its occurrence. Thus, hypoglycemia occurring while the patient is driving a car may be fatal. Frequent episodes of hypoglycemia may well produce irreversible cerebral damage.

5. *There shall be no acetone in the urine.* There are no exceptions to this rule.

The Maintenance of Body Weight. The weight of the human body is a direct function of the caloric intake and the caloric needs. At any time that the caloric intake exceeds the daily rate of combustion the excess will be stored in the form of fat. At any time when the daily intake is not sufficient to meet the daily combustion the difference will be made up by the metabolism of previously stored fat. This is a hard and fast rule which is based on the incontrovertible law of the conservation of matter and the woesome tales of patients who claim to gain weight while eating nothing are not to be heeded. The accumulation of edema fluid, of course, may cause weight gain in the absence of fat storage. The basic rule is not changed by the occurrence of "glandular disturbances" although these may vary the caloric needs. Thus a patient suffering from hypothyroidism may need fewer calories to maintain his body weight than the normal person but if he reduces his intake correspondingly there will be no weight gain. Therefore the first factor in the control of the diabetic patient is the maintenance of a correct diet. The total caloric content of this diet should be such that the weight will be returned to normal as promptly as possible. If the patient is overweight the number of calories supplied daily should be less than the number consumed and, conversely, the underweight patient should receive calories in excess of his daily consumption.

Extremely accurate estimates of the patient's caloric consumption each day are not necessary for this type of work. Certain relatively crude concepts of quantitative metabolism therefore are sufficiently accurate for this purpose. Thus, for the adult it is a reasonable approximation of the truth to say that the daily combustion of calories at basal conditions is ten calories per pound of body weight. Additional allowances should be made for physical activities. Even when completely confined to bed the actual combustion will be approximately ten per cent over the basal figure increasing gradually to forty per cent for a person in a rather sedentary occupation and on up to two hundred fifty per cent for the extremely active male doing heavy physical labor. Having determined the caloric requirement to maintain the patient's present weight, calories are then added or subtracted in order to return the weight to normal.

Thus a one hundred eighty pound man, aged thirty, who is six feet tall, is practically at his ideal body weight. In order to maintain this weight he would require eighteen hundred calories at basal conditions plus a forty per cent allotment for sedentary activity (720 calories). In this way it can be seen that a total daily intake of twenty-five hundred and twenty calories will approximately maintain his present weight. Subsequent variations in the direction of increase or decrease can be made after a trial period has demonstrated whether or not this amount is exactly correct. Similarly, a one hundred eighty pound man, aged thirty, who is only five feet four inches tall would have an ideal body weight of approximately one hundred forty pounds. The number of calories necessary to maintain his ideal weight, one hundred forty pounds, would be fourteen hundred plus five hundred sixty for his moderate physical activity. Thus, nineteen hundred and sixty calories would maintain his weight at one hundred forty. However, since his weight at present is one hundred eighty pounds he will be burning calories at the rate of twenty five hundred and twenty per day. If we feed him only nineteen hundred and sixty calories he will lose weight at the rate of five hundred sixty calories per day. Since each gram of fat supplies nine calories it can be seen that he will lose approximately sixty-two grams of fat each day. However, on such a program, as his weight decreases, his rate of weight loss will also decrease until, when he approaches that weight which can be maintained by the diet he is consuming, weight loss will no longer take place. Thus as we will see below, the caloric content for diets for obese people should usually be somewhat less than that required to maintain even their ideal body weight.

Once the total caloric content of the diet has been decided upon its division as to carbohydrate, protein, and fat content must be considered. Generally speaking the diabetic who is to be treated without insulin (mild, obese) should be given a low carbohydrate diet (125 to 175 grams daily) while the patient who is to receive insulin should receive as high a carbohydrate diet as is compatible with his total daily caloric allotment. The minimum daily protein requirement for adults is one gram per kilogram of body weight daily but no adult, no matter how light in weight, should receive less than seventy grams per day. Generally speaking the modern tendency is to prescribe diets with more liberal protein allotments, such as one and a quarter to one and a half grams per kilogram of body weight. The fat content of the diet should be sufficient to make up the total calories required.

Thus, in the patient mentioned above, who weighed one hundred eighty pounds, and was 64 inches tall, the prescription should read something as follows: Carbohydrate 150 grams daily, protein 90 grams daily, fat 30 grams daily, with a total caloric value of 1230 calories. This total caloric value is less than nineteen hundred and sixty which would maintain him at his ideal weight of one hundred forty pounds. Since the carbohydrate and protein intake is determined by body requirements of protein and tolerance to glucose, the only additional food which could be given to such a patient in order to give him more calories would be fat thus raising the total content of the diet to approximately one hundred ten grams of fat. Since it makes no difference in general metabolism whether the fat which supplies the caloric need comes from the diet or from the storage depots of the body it should be obvious that it is just as well for the patient to burn his own body fat as to increase his ingestion of that substance. The general rule "Don't feed fat to fat people" would seem to be valid in all such cases.

As the obese patient's weight returns towards normal, the caloric content of the diet can be increased to that amount which will be sufficient to maintain his weight at its ideal figure.

2. *Maintenance of normal fasting blood sugar.* The maintenance of a normal fasting blood sugar is usually easy in the obese, mild diabetic patient who follows a reduction diet. Under these circumstances the post-absorptive blood sugar level will return to normal within a week to ten days even though the body weight has not yet completed its reversion to the ideal. As long as the patient remains obese there may continue to be a tendency to post-prandial hyperglycemia and glycosuria but when the weight has become normal this tendency will disappear in most cases so that the patient may then return to a more or less "free" diet as far as his carbohydrate, protein, and fat proportions are concerned, *provided that the caloric intake is not excessive.*

If, on the basis of the history, it is obvious that the patient cannot maintain his ideal body weight without the administration of insulin the amount of insulin given, and its type, should be regulated according to the level of the blood sugar throughout the day. This will be discussed in a subsequent paragraph.

3. *Prevention of Glycosuria.* Glycosuria in the diabetic patient who is on a standard program of insulin can usually be prevented either by reducing the amount of readily available carbohydrates in the feeding which immediately precedes the occurrence of glycosuria or by the administration of rapidly acting insulin immediately before that meal. Specific indications will be discussed under a subsequent heading.

4. *Prevention of Hypoglycemia.* Hypoglycemic spells do not occur in the diabetic who is not taking insulin. One need not be concerned about this possibility in the mild, obese, non-insulin requiring diabetic who is being controlled by diet alone. The time of occurrence of hypoglycemia is extremely important since it varies directly with the type of insulin which is being used. Thus in a patient who is taking protamine zinc insulin in a single dose before breakfast, the greatest tendency towards hypoglycemia will be during the early morning hours between midnight and breakfast. In the patient who is taking globin insulin the greatest tendency towards hypoglycemia will be between lunch and supper, usually around four P. M. If gypoglycemia occurs following a single dose of regular or crystalline insulin this episode will take place within six to eight hours after the injection. In the patient whose fasting blood sugar is normal and whose urine is free of sugar it is frequently helpful to test the blood sugar at different times throughout the day in order to be forewarned of the possible occurrence of hypoglycemia. In patients whose meals are necessarily far apart (more than five hours) it is usually wise to add a small feeding midway between the two meals in order to prevent hypoglycemia. This feeding may consist of a glass of milk or a small serving of fruit.

5. *Prevention of Ketonuria.* Since ketonuria develops only when the combustion of fat is excessive an increase in the rate of carbohydrate combustion will relieve it. Even small degrees of ketonuria should not be tolerated. Thus in the obese patient who is on a drastic reduction diet there may be small amounts of acetone in the urine during the first week or two of the program. If this occurs a small amount of extra carbohydrate should be added to the diet. In the diabetic patient who is taking insulin, if the four criteria listed above are being met, it is most unlikely that acetone will appear in the urine. However if ketonuria does develop the amount of insulin being administered must be increased and, if necessary, additional carbohydrate may be required as well.

Office Management of the Uncomplicated Diabetic Patient. The office management of the diabetic patient depends entirely upon the accumulation of sufficient pertinent data upon which to base a rational program. Once the data have been accumulated a sensible program can readily be outlined if the criteria of good control mentioned previously are kept in mind.

The minimum necessary data consist of:

1. Fasting blood sugar level.
2. Urinalysis of fractional specimens collected approximately three hours after each meal and upon arising in the morning.
3. Body weight.
4. History relative to hypoglycemia.
5. A knowledge of the preceding insulin dose.

It is likewise essential that the physician have a complete understanding of the mode of action of the different types of insulin. Thus protamine zinc insulin is a delayed type of insulin exerting its main blood sugar lowering effect between 6 and 26 hours after administration. Globin insulin has a range of 1 to 20 hours, and regular or crystalline insulin from $\frac{1}{2}$ to 8 hours. N. P. H. resembles glubin very closely.

The accompanying charts of actual cases of each of the three main groups of diabetic patients illustrate how the data were accumulated and upon what basis the decisions were made.

FIGURE I

Age - 64
F. W. Height - 62½" Ideal Weight - 140
Weight - 180

Mild Diabetes Obese

Date	Wt.	Diet	FBS	7 A. M.	11 A. M.	4 P. M.	9 P. M.	Insulin	Hypoglyc.	Complications
6-12-45	180[1]	C-150 P-100[2] F-50	276	4+	4+	4+	4+	0[3]	0[4]	Arteriosclerosis[5]
6-21-45	180¼[6]	Urged to follow	270[7]	0[7]	0	0	0	0	0	
7-17-45	175¼[8]	O. K.	136[8]	0	0	0	0	0	0	
8- 7-45	171¼	Eating[9] raisins and Peaches	190[9]	0	0	0	0	0	0	
8-28-45	168¼[10]	On diet	124	0	0	0	0	0	0	
9-25-46	168[11]	Off diet	116	0	0	0	0	0	0	
10-23-45	166½[12]	Off diet	140	0	0	0	0	0	0	
11-20-45	168[13]	Off diet	190	0	0	0	0	0	0	
1-15-46	159¾[14]	On diet	136	0	0	0	0	0	0	
4-16-46	157[15]	Fairly[16] careful	120	0	0	0	0	0	0	

Case I

1. The weight of 180 pounds is approximately 40 pounds overweight. The hyperglycemia has been discovered accidentally during an insurance examination. There is no history of polydipsia or polyuria. There has been a history of very gradual weight loss from 223 pounds to the present weight of 180.

2. The diet is low in carbohydrate, adequate in protein, and low in calories (1450). The 50 gram allotment of fat is allowed because it is very difficult to consume 100 grams of protein daily without getting about 50 grams of fat.

3. The patient is given no insulin because he obviously is a mild, non-insulin requiring diabetic.

4. Hypoglycemia will not occur since the patient is taking no insulin.

5. The arteriosclerosis present is somewhat more than is seen in the average patient of age 64. This is very common in the mild diabetic, presumably because the disease has existed for a long time before it is discovered.

6. Patient returns after ten days and it is obvious that he has not been following the diet since he has gained weight.

7. The fasting blood sugar remains elevated but the urine is now free of sugar suggesting that he has at least limited his consumption of carbohydrate food somewhat.

8. The patient returns now after three weeks during which he has lost weight approximately at the predicted rate and the fasting blood sugar is now only very slightly elevated. The urine remains free of sugar and the patient feels much better.

9. Three weeks later the patient returns still losing weight but less rapidly than before. He admits to having eaten a large quantity of raisins and peaches during the week preceding his visit and as a consequence his blood sugar is now elevated. His consumption of these fruits was not sufficient to stop his weight loss entirely but it did produce hyperglycemia. The fact that no sugar appears in the urine suggests that the "renal threshold" is quite high. This is also illustrated by the absence of glycosuria when his blood sugar was 270 mgm.% on June 21st.

10. Three weeks later his weight loss has continued at a fairly satisfactory rate and his blood sugar and urine are now normal.

11. On September 25th he has lost no weight and it is obvious that he has not been following his diet. In spite of this his blood sugar is now normal. It can be deduced that his tolerance to glucose has been sufficiently increased by his twelve pound weight loss during the preceding three months so that even though his food intake is now excessive the blood sugar does not rise as it did previously.

12. On October 23rd the weight loss continues but very slowly proving that he has not followed his diet accurately, but again the blood sugar remains near normal.

13. After a period of four weeks, during which he has gained weight again the blood sugar is now elevated but the urine remains free.

14. A period of conscientious observation of the diet is followed by prompt return of all the figures to normal.

15. Gradual weight loss continues but it is obvious that he is not rigidly adhering to his diet. In spite of this his glucose tolerance has sufficiently improved so that his blood and urine sugar findings remain normal.

16. Having lost 23 pounds in weight it is obvious that if this weight loss will continue until he reaches his ideal standard weight of 140 pounds his glucose tolerance will improve sufficiently so that he can eat a normal diet provided that it is low enough in calories to avoid further weight gain.

FIGURE 2

Age - 34
H. M. S. Height - 69½" Ideal Wt. - 160
Weight - 159

Moderately Severe (Stable, Insulin Requiring)

Date	Wt.	Diet	FBS	7 A. M.	11 A. M.	4 P. M.	9 P. M.	Insulin	Hypogl.	Comment
2- 3-46	195[1]	C-280[2] P-110 F-95	345	S-4+ A-2+	S-4+ A-2+	S-4+ A-2+	S-4+ A-2+	10-P. Z. I.[3] 10-Globin	0	Pilonidal sinus (Clean) Acetonuria - 2+[4]
2- 6-46[5]	163[6]	Carefully followed	280[7]	S-4[8] A-1	S-4 A-1	S-4 A-1	S-4 A-1	15-P. Z. I.[9] 15-Globin		Nocturia ceased
2-19-46	164[10]	Carefully followed	280[11]	S-4 A-0	S-4 A-0	S-3 A-0	S-4 A-0	25-P. Z. I. 10-Globin		
2-23-46	167½	Reduce[13] h. s. snack	224[12]	S-4 A-0	3	0	0	30-P. Z. I. 0-Globin	5:30 P. M.	
3- 2-46	165	Add[15] milk 3:30 P. M. 10 A. M.	160[14]	S-0	S-0	0	0	28-P. Z. I.	9:30 A. M. 10 A. M. 4 P. M.	
3-23-46	169½	Stop n. s.[16] milk. Stop bread, butter, cream	190	0	0	0	0	28-P. Z. I.	0	
4-13-46	171	Stop bed-[17] time snack altogether	170	0	1	0	0	25-P. Z. I.	Very slight 11 A. M.	
4-29-46	170	Change[18] all milk to skim	140	0	0	0	0	25-P. Z. I.	0	
5-14-46	170[19]	Same	114	0	0	0	0	25-P. Z. I.	0	

CASE 2

1. This patient weighed 224 pounds in February of 1944, at which time his urine showed no sugar. This urinalysis was done because his mother had recently died "of diabetes." He followed a strict diet for approximately one year and lost 70 pounds. However since stopping the special diet his weight has continued down to its present level of 159 and during the past two months he has complained of thirst, polyuria, nocturia, and general fatigue. He has been urinating from 10 to 16 times a night during the past two weeks.

2. The rapid weight loss and polyuria and polydipsia immediately classified this patient as an "insulin-requiring" diabetic. He is therefore allowed a high carbohydrate diet with an adequate protein allotment and calories sufficient to maintain his weight, which at present is approximately ideal. This diet is divided into three meals with one fifth of the total daily allotment at breakfast, two fifths at lunch and two fifths at supper. In addition he is allowed a "snack" consisting of a glass of milk and a slice of bread with butter at bedtime.

3. He is started on 10 units each of protamine zinc and globin insulin. It has been impossible in our experience to judge in advance which type of insulin will be best suited to the individual patient. We therefore have started some of our patients on combinations (separate injections) of protamine and globin and by subsequent alterations in the dose have been able to determine with a single program of standardization which type of insulin will be more suitable to the particular patient.

4. The presence of acetonuria is supportive evidence that this patient is an "insulin-requiring" diabetic since the mild, obese, diabetics rarely excrete acetone except in the presence of semi-starvation or some complication.

5. The patient returns after having taken insulin for two days. This interval is made short because of the danger of impending acidosis as shown by the presence of acetone in the urine.

6. In this short interval of 72 hours the patient has gained 4 pounds. This does not represent deposition of fat but rather the retention of fluid, as the patient corrected the dehydration which was present with the impending coma.

7. The blood sugar remains high and the urine is still "loaded" with sugar.

8. Acetone is still present, but is less in amount.

9. Since glycosuria is present throughout the day and the fasting blood sugar is still grossly elevated one cannot yet determine the time relationships of the insulin needs and therefore both the protamine and the globin doses are increased to 15 units.

10. Three days later the patient has gained 1 pound. This probably represents at least partly a storage of fat.

11. Blood sugar remains elevated but the acetone has now cleared from the urine. It is becoming apparent that the globin insulin is bringing the blood sugar lower during the mid-afternoon (4 P. M.) than at any other time during the night or forenoon.

12. The patient returns now with the blood sugar somewhat lower, the afternoon urine is free of sugar, and he complains of a slight hypoglycemic reaction just before supper. The globin insulin is therefore discontinued and the protamine increased to 30 units.

13. With the tendency to excessive weight gain and hyperglycemia during the night, the bedtime snack is discontinued.

14. The blood sugar is now approaching normal and the urine is free of glucose. However insulin reactions are occurring at various times throughout the day. This is not uncommon during the first few weeks during which a diabetic patient is under control since, under the influence of adequate control, the tolerance to glucose tends to improve rather dramatically during the first several weeks and it is necessary to reduce the insulin in order to keep ahead of this trend.

15. In view of the loss of a small amount of weight and the frequent reactions, a glass of milk is added to the diet in the middle of the morning and in the middle of the afternoon.

16. The excessive weight gain continues and the fasting blood sugar remains high. The diet is therefore altered by reducing the evening meal.

17. The weight is still increasing beyond the ideal. The fasting blood sugar remains elevated but he has had several very slight spells of hypoglycemia at approximately 11 A. M. The insulin is therefore reduced to prevent these hypoglycemic spells, and the "bedtime snack" is discontinued altogether in an effort to restore the fasting blood sugar to normal as well as to prevent further weight gain.

18. The patient now is no longer gaining weight, his blood sugar is practically normal, and the urine is free of sugar. In order to continue this favorable trend, all of the milk in his diet is now changed to skim milk to reduce its caloric content without materially effecting its protein or carbohydrate composition. The insulin dose of 25 units of protamine zinc insulin is continued.

19. The patient now fulfills all the criteria of good control.

FIGURE 3

J. S.
Age 18
Height: 69"
Weight: 140
Ideal Wt. - 150

Severe Unstable Diabetes

Date	Wt.	Diet	FBS	7 A. M.	11 A. M.	4 P. M.	9 P. M.	Insulin	Hypogl.	Comment
5- 3-43	140	C-175[1] P-80 F-80	120[2]	0	Tr.	Tr.	1	P. Z. I.-5 at bed-time	0	Polydipsia. Polyuria, Weight loss
5-13-43	143[4]	C-250[3] P-125 F-100	122	0	0	Tr.	Tr.	P. Z. I.-5 before breakfast		
5-27-43	140¼[5]	Same	108	0	0	0	1	P. Z. I.-7		
6-17-43	137[6]	Same	190	4 Acetone+	4	4	4	P. Z. I.-8		
6-24-43	136[7]	Same	180	4 Acetone 0	4	4	4	P. Z. I.-16[7]		
7- 1-43	135½[8]	Same	190	4 Acetone 0	4	4	4	P. Z. I.-22		
7- 5-43	139½[9]	Same	84	0	4[10]	0	0	P. Z. I.-35		
7-22-43	139	Same	94	4	0	2	4	P. Z. I.-35 Reg.-5		
8-13-43	142[12]	Same	96	0	0	4	4	P. Z. I.-30[11] Reg.-5-0-5		
8-25-43	145[13]	Stop bread supper & breakfast	100	1	2	Tr.	4	P. Z. I.-32 Reg.-5-5-0		
9- 9-43	148[14]	Same	112	0	0	0	0	P. Z. I.-32 Reg.-5-0-0-0		

CASE 3

1. This young boy with severe, unstable, diabetes had been losing weight from 160 to 135 pounds for two years. He had been treated elsewhere with this diet which has the fault of being too low in carbohydrate and too low in calories.

2. In spite of the fact that his blood sugar is near normal and his urine contains only small amounts of sugar, this patient cannot be said to be well controlled since his weight is below normal.

3. The diet therefore is changed to this formula and the insulin given in the morning before breakfast.

4. On this program he gains weight and the blood sugar remains normal Very slight glycosuria continues. In an effort to control the afternoon and evening glycosuria the insulin is increased to 7 units.

5. In spite of the increase in diet and insulin the patient has again lost weight which is difficult to explain since the fasting blood sugar remained normal and the urine is still practically free of sugar. However, subsequent events suggest that this may have been a warning of an impending increase in the severity of his disease.

6. In three weeks there has been three pounds weight loss the blood sugar is now elevated and the urine is full of sugar and shows a small amount of acetone. In addition the patient complains of polyuria and polydipsia.

7. Even with the insulin dose doubled to 16 units the weight loss continues and glycosuria is constant. The blood sugar remains elevated. The insulin dose is therefore further increased to 22 units.

8. This slight increase in insulin dose has affected the blood sugar and urine sugar not at all and the weight loss continues. It therefore is obvious that the patient's diabetes has become much more severe and larger doses of insulin will be necessary to control it. It therefore is increased to 35 units.

9. Over a period of four days he immediately gains weight the fasting blood sugar returns to normal and the urinary picture is much improved.

10. Because of the occurrence of glycosuria after breakfast a small amount of regular insulin is added to the program in a separate injection before breakfast. This is done without lowering the amount of protamine zinc insulin since the dose of regular insulin before breakfast will not appreciably effect the fasting blood sugar.

11. The patient now returns with a normal fasting blood sugar but spilling sugar into the urine in midafternoon, evening, and apparently during the night. Since the fasting blood sugar is normal most of the glycosuria in the 7 A. M. specimen must have accumulated early in the evening following supper. A small dose of crystalline insulin (5 units) is therefore added to the program before supper.

12. Control is now improving and the weight gain is gratifying. The fasting blood sugar is normal but the patient continues to spill after lunch and after supper. In an effort to control this the five units which had been being given before supper is moved up to the noontime dose. Since this will reduce somewhat the insulin activity during the night the dose of protamine is increased slightly to make up for this change.

13. The rate of weight gain is now excessive and since the urine contains sugar after breakfast and after supper those two meals are reduced. In addition the noontime dose of regular insulin is dispensed with.

14. The patient is now at or near his ideal body weight and fulfills all of the other criteria of good control.

It must be remembered in handling any patient suffering from diabetes mellitus that this condition is probably more variable from one patient to another than any other problem with which the physician is faced. It therefore is impossible to set up any rigid set of rules for handling each patient. If the physician is aware of the basic metabolic defects, the result he is trying to achieve, and the methods of treatment available to him, there is no reason that each of these patients cannot be well controlled. Of course there are patients who refuse to follow instructions and the power to control these is not within the strength of the individual physician. Despite the fact that hard and fast rules are impractical a repetition of the following broad statement may summarize the general attitude to be adopted toward these diabetic patients:

(1) The grossly overweight patient who has not lost weight or suffered from polydipsia or polyuria before the diagnosis of diabetes has been made should be treated without insulin except during the period of some complication.

(2) The criteria of good control are that the body weight shall be normal, fasting blood sugar shall be normal, glycosuria shall not occur throughout the day and there shall be neither ketosis nor hypoglycemia.

(3) The patient who has lost weight below his ideal standard weight under the influence of his diabetes usually will require insulin for his control.

(4) The patients who are receiving insulin should be treated with high carbohydrate diets (250 to 400 grams daily).

(5) The patients who are not receiving insulin should be treated with low carbohydrate diets, 125-175 grams daily).

(6) The speed and duration of activity of the four types of insulin now available must be kept in mind. No one of them is suitable for the treatment of all patients but an intelligent concept as to their individual characteristics will readily demonstrate which patients will receive most benefit from which type of insulin.

Insulin Mixtures. A few patients can be controlled best on mixtures of protamine zinc and regular (or crystalline) insulin or mixtures of N.P.H. and regular. The exact proportion of these mixtures varies from patient to patient but the great majority do best on a proportion consisting of two parts of regular or crystallin insulin mixed with one part of protamine zinc insulin. In N.P.H.—regular mixtures any proportion which "works" will be satisfactory. These mixtures are usually most suitable for those patients who, although the fasting blood sugar is normal on a single dose of protamine zinc or N.P.H.

continue to have glycosuria during the day. Although this type of patient can sometimes be controlled by the use of globin insulin there are some where an adequate amount of globin insulin either produces hypoglycemia during the day or fails to control the fasting blood sugar during the night. Thus if a patient is able to control his fasting blood sugar with a dose of 40 units of protamine zinc insulin for example, but continues to spill moderate amounts of sugar during the day, a good starting point in beginning treatment with a mixture would be to mix 30 units of crystalline insulin and 15 units of protamine zinc insulin in the syringe and administer this each morning before breakfast. Subsequent study of the fractional urinalyses throughout the day and the fasting blood sugar in the morning will give the indications for appropriate alterations in this mixture. Thus if the fasting blood sugar remains normal but glycosuria continues during the day the amount of regular insulin in the mixture should be increased and the amount of protamine slightly decreased. On the other hand if the blood sugar in the morning before eating is elevated but the urines throughout the day are relatively clear the amount of protamine should be increased while the regular is decreased. It should be emphasized that the two to one ratio of regular insulin to protamine is a good starting point, but that variations in this ratio are the rule rather than the exception.

Hypoglycemia. We will restrict our discussion of hypoglycemia here to those episodes which occur in the diabetic patient who is taking insulin. Spontaneous hypoglycemia has been adequately dealt with by others.

The diabetic patient who is taking insulin for the control of his disease may be subject to hypoglycemia either due to an error in his insulin dose, excessive exercise during a period when the insulin he has taken is active, or the deficient ingestion of food. Likewise the disappearance of some previously existing complication which was increasing his insulin requirement may produce hypoglycemia unless the insulin dose is decreased in time.

Hypoglycemia due to regular insulin almost always occurs within six hours after the administration of the offending dose. When hypoglycemia occurs in the patient taking globin insulin it is most likely to occur within six to twelve hours after the injection, while the patient taking protamine zinc insulin is most likely to suffer from hypoglycemia from twelve to twenty hours after its administration.

Symptoms: The symptoms of hypoglycemia are extremely variable in different patients but are frequently quite constant in repeated occurrences to the same patient. The initial warning usually takes the form of hunger, nervousness, or headache. This may be followed within a period of a very few minutes by excessive perspiration, trembling, slurring of the speech, blurring of the vision, mental confusion, disorientation and finally loss of consciousness. There may or may not be clonic or tonic convulsions. The length of time from the first warning to loss of consciousness varies from a few minutes to a half hour or more.

Physical Findings: The patient in hypoglycemia is usually pale and his skin is cold and moist. His temperature may be subnormal. The pulse and respirations are normal. The pupils may be slightly dilated and nystagmus sometimes occurs. There is no specific odor to the breath. Blood pressure is normal, the heart, lungs and abdomen show no specific findings. There may be transient changes in the reflexes and abnormal plantar response or a positive Hoffman's sign may exist. There frequently is excessive salivation and if convulsions have occurred the patient may bite his tongue or froth at the mouth. We have seen patients in tonic opisthotonus due to hypoglycemia.

Laboratory Findings: If time is taken for a determination of the level of sugar in the blood the results will almost always be below 50 milligrams per cent. This level again varies remarkably from patient to patient, but usually the same patient will develop symptoms at about the same level. Likewise the level at which symptoms tend to occur is somewhat lower when the hypoglycemia is produced by slow acting insulin than it is when the rapid acting insulin is being used. There will be no acetone in the urine but it must be remembered that the bladder urine may contain sugar. This is so because sugar may have been passed into the bladder some hours before the hypoglycemia occurred. However if the bladder is emptied and a freshly secreted specimen of urine collected it will be free of sugar. The leukocyte count will be normal. The diagnosis of hypoglycemia is usually so obvious from the history and physical findings that these laboratory studies are not required.

Treatment: All diabetic patients who are taking insulin should carry readily available carbohydrate in some form on their person at all times. At the first warning of hypoglycemia they should, without hesitation, take some of this carbohydrate by mouth. The patient should be told not to procrastinate in this matter since, within a very few minutes after the first warning, his mental processes become so clouded that he is no longer capable of good judgment. Likewise it should be remembered that the ingestion of a small amount of carbohydrate will not do the diabetic patient any permanent harm even if his fear that he is developing hypoglycemia is unwarranted. Every diabetic patient who is taking insulin should carry upon him some form of identification with the information that he is diabetic, that he does take insulin, that if he is found unconscious or sick or irrational he should be given sugar. A metal wrist band is excellent for this purpose.

If these measures are not undertaken in time and the hypoglycemia progresses to the stage of unconsciousness the ideal treatment is the intravenous injection of a sterile solution of 50% glucose in 15 to 25 cc. amounts. This should be given slowly through a small needle in order to avoid thrombosis of the veins. If the unconsciousness is due to hypoglycemia the patient will usually return to consciousness within a period of 20 minutes after the injection of 25 cc. of 50% glucose. If this does not occur then the unconsciousness is almost certainly due to something else. As soon as the patient has regained consciousness he should be instructed to eat a fair sized meal in order to prevent a recurrence. A subsequent discussion with the patient after he is feeling better will reveal the cause of the hypoglycemic shock.

If intravenous glucose solutions are not available and the patient is already unconscious the hypodermic use of epinephrine (one cc. of 1-1000) may occasionally be successful in arousing the patient long enough to permit the administration of carbohydrate by mouth. This is especially true if the hypoglycemia has been produced by regular or crystalline insulin since the liver stores of glycogen are relatively intact and the blood sugar level is not likely to be very low. If the hypoglycemia has been produced by protamine zinc or globin insulin there is a fair chance that this method will not be successful.

The administration of any appreciable amount of fluid or solid by mouth to the unconscious patient must not be undertaken. If necessary a gastric tube can be passed and orange juice, sugar, or glucose solution administered through the tube. In extreme emergency when none of these measures is possible sweet liquids can be dropped under the tongue with an eye-dropper but even this procedure may lead to aspiration of the fluid.

If the patient is subject to repeated episodes of hypoglycemia at any particular time of the day an additional feeding containing both carbohydrate and protein (milk is good for this purpose) should be given approximately one hour before the time of occurrence of the hypoglycemic spell.

Pregnancy in the Diabetic: Diabetic women are relatively infertile, presumably because of some variation in pituitary function, but the nature of this is not known. When they do become pregnant however, they present very special problems in management and extreme care on the part of both physician and patient is essential for the welfare of both mother and child.

It has long been believed that the diabetic mother was much more liable to complications during her pregnancy than the non-diabetic woman. It is our belief, however, that this increased liability towards complications can be prevented provided that rigid control of the diabetes thoughout the period of gestation can be maintained. The usual complications which occur are polyhydramnios, excessively large babies, stillbirth and toxemias of pregnancy. Even if it is true that these complications can be prevented by rigid control of the diabetes during pregnancy, the state of pregnancy itself makes the diabetes so unstable and difficult to manage that it is not unusual for complete control to be impossible. In these patients, Joslin and White have shown that the occurrence of toxemia can frequently be predicted by a determination of the serum prolan level at the beginning of the third trimester of pregnancy. Their work has shown that if the serum prolan level is excessive, toxemia is very likely to develop and they have been able to prevent the occurrence of this complication in a significant number of patients by the administration of very large doses of estrogen (15 to 135 mgm. of stilbesterol daily).

The type of diet prescribed for the pregnant diabetic woman should be similar to that used at other times except that not uncommonly the obese, mild, non-insulin requiring diabetic woman may, during the term of her pregnancy, become sufficiently severe to require insulin. All of these diets should be high in protein (100 to 125 grams) and the caloric allotment should be carefully regulated to avoid excessive weight gain. If control of the diabetes is possible with the slow acting insulins this is permissible but not uncommonly it will be necessary to prescribe four equal feedings with four doses of crystalline insulin in exactly the same fashion as has been described for the treatment of infections. Frequently during the second and third trimesters there may be a reduction in the insulin requirement, presumably due to the fact that at this time the fetal pancreas begins to secrete insulin.

At the time of delivery the problem of maintaining the patient free of hypoglycemia and acidosis is exactly similar to the problem one faces when a surgical operation is necessary. During this time likewise, hyperglycemia can be allowed with impunity provided that acidosis is prevented.

The child born of a diabetic mother is not uncommonly subject to hypoglycemic spells during the first five to six days after delivery. This is presumably due to the fact that the fetal pancreas has become hyperactive in an effort to compensate for hyperglycemia in the placental blood. Theoretically this could be prevented provided the mother's diabetes was carefully controlled throughout her pregnancy. Such an infant should be fed frequently during the first five days with readily available carbohydrates. We recommend one ounce of 10% lactose by gavage tube every hour through the day and night for the first five days. Usually within this period the tendency toward hypoglycemia will disappear.

As soon as the pregnancy has been terminated the diet and insulin should be regulated in exactly the same fashion as would be done if this patient presented herself for standardization. However, the diet should be again liberal in protein and perhaps slightly high in its total caloric centent if the mother is capable of feeding the infant at breast. These women usually cannot nurse their infants, again presumably due to pituitary dysfunction.

Diabetic Diets. The problem of diabetic diets is by no means as complicated as it would appear from a superficial acquaintance. The general principles are exactly similar to those upon which any healthful diet should be formulated with the exception that the obese, non-insulin requiring diabetic patient should be treated with a diet which is low not only in calories but also in carbohydrate. Such diets for the obese diabetic should usually contain not more than 150 grams of carbohydrate per day.

Caloric requirements for adults have already been described above, children have a relatively greater need for calories than adults. This is in part due to their growth requirements and in part due to their greater physical activity. The total allotment for children according to Rose should approximate the following figures:

Age in years	**Calories per pound**
Age 3 - 5	40 calories
" 6 - 9	35 "
" 10 - 13	30 "
" 14 - 15	25 "
" 16 - 17	25 "
" 18 - 18	23 "

2. *Protein Requirements* It has long been stated that the daily protein requirement for adults is one gram per kilogram of body weight but that no adult, no matter how small, should receive less than 70 grams of protein daily. The modern trend in dietetics is to prescribe more liberal allowances of protein so that in general we recommend about 1.25 grams of protein per kilogram of body weight per day, with a minimum allotment of 90 grams daily. Children should be allowed 2 to 3 grams of protein per kilogram of body weight each day.

3. *Carbohydrate Requirements* The patient who receives insulin should also receive a high carbohydrate diet (200 to 400 grams daily) but the patient who is not to receive insulin should receive 150 grams or less of carbohydrate per day. Probably no one should be given less than 125 grams of carbohydrate per day since this at least makes possible the occurrence of ketosis of starvation.

4. *Fat Requirement*: The only criterion for gauging the allotment of fat is the total number of calories desired in the diet. It is true that if the fat allowance is below approximately 50 grams daily there may well be danger of a deficiency of the fat soluble vitamins, A. and D. However, it is now so easy to replace this lack with supplementary vitamin prescriptions that it need not be a serious consideration.

5. *Mineral Requirement*: The requirements for minerals such as calcium and iron should constantly be kept in mind but most diabetic diets contain adequate amounts of milk, meat, and fresh vegetables so that there is a little danger of a deficiency of these elements. One quart of milk daily provides an adequate amount of calcium. If the patient is eating 90 grams of protein daily in the form of meat, eggs, and cheese, it is practically impossible for there to be a significant iron deficiency.

Actually the following diets, or a variation thereof will suffice in the control of the great majority of diabetic patients:

1. *For reduction in weight of the obese, non-insulin requiring diabetic.*

Carbohydrate 150—Protein 90—Fat 40.

DIET # 1

	Carbohydrate	Protein	Fat
BREAKFAST	30	18	8
Skim milk (260)	13.0	9.1	0
Bread, 1 slice (30)	15.7	2.6	0.6
1 egg	0.4	6.4	5.8
1 teaspoonful cream	0.24	0.17	1.2
Coffee	0	0	0
LUNCH & SUPPER (each)	60	36	16
Lean meat—3 ounces	0	16.2	15.2
10% vegetable (200)	18.6	2.4	0.6
10% fruit (120)	12.0	1.1	0.2
1 slice bread (30)	15.7	2.6	0.6
8 ounces skim milk (240)	12.0	8.4	0
Cottage cheese, ⅛ cup (30)	1.2	5.3	0.2

2. For maintenance in weight of the "non-insulin requiring" diabetic after his weight has been reduced to normal.

Carbohydrate 175—Protein 100—Fat 100

DIET # 2

	Carbohydrate	Protein	Fat
BREAKFAST	35	20	20
Egg — 1	0.4	6.4	5.8
1 cup skim milk (240)	12.0	8.4	0
1 slice bread (30)	15.7	2.6	0.6
10% fruit (50)	5.0	0	0
2 ounces light cream (30)	2.4	1.6	12.0
Butter ½ teaspoonful	0	0	2.0
Coffee	0	0	0
LUNCH & SUPPER (each)	70	40	40
8 ounces milk (240)	11.8	8.4	9.4
1 slice bread (30)	15.7	2.6	0.6
⅛ lb. meat (120)	0	23.2	15.6
8 ounces vegetable (240)	24.0	2.4	0.6
7 ounces fruit (200)	20.0	2.1	0.7
1 tablespoonful butter (15)	0	0	12.1

3. For maintenance in weight of insulin requiring, active, adult of 180 lbs. or for an active child of about 100 lbs.

Carbohydrate 350—Protein 100—Fat 100

DIET # 3

	Carbohydrate	Protein	Fat
BREAKFAST	70	20	20
Milk (240)	11.8	8.4	9.4
Bread (60)	31.4	5.2	1.2
Orange juice (270)	27.0	0	0
Egg	0	6.4	5.8
Butter (5.0)	0	0	4.0
LUNCH & SUPPER (each)	140	40	40
3 slices bread (60)	47.1	7.8	1.8
1 cup milk (240)	11.8	8.6	9.4
2 cups 10% vegetable (480)	48.0	4.5	1.2
1 2/5 cup 10% fruit (340)	34.0	0	0
4 ounces lean meat (120)	0	21.0	27.0

4. For maintenance in weight of insulin requiring, less active, or smaller (150 lbs.), adult, or for an active child of about 75 lbs.

Carbohydrate 250—Protein 100—Fat 60

DIET # 4

	Carbohydrate	Protein	Fat
BREAKFAST	45	19	5.2
1 egg	0	6.7	5.2
1 cup skim milk (240)	12	8	0
¾ cup 10% fruit (180)	18	2	0
1½ slices bread (45)	15.5	2.5	0

LUNCH & SUPPER (each)	105	39	26
3 oz. meat, fish, fowl, cheese or 3 eggs (90)	0	21	16
1 cup skim milk (240)	12	8	0
2/3 cup 10% fruit (160)	18	1	0
1¾ cup 10% vegetable (420)	44	4	0
2 slices bread (60)	31	5	0
2 teaspoons butter (10)	0	0	10

TABLE OF FOOD VALUES

5% (2x)

Asparagus
Bamboo Shoots
Navy bean sprouts
String beans
Beet greens
Broccoli
Cabbage
Cauliflower
Cantaloupe
Celery
Chard
Chicken soup (canned)
Cucumber
Eggplant
Endive
Fennel
Honey dew melon
Kale
Kohlrabi
Lettuce
Muskmelon
Mustard greens
Peppers
Pumpkin
Radish
Rhubarb
Sauerkraut
Spinach
Squash (summer)
Tomato & juice
Turnips
Watercress
Watermelon

10% (x)

Applesauce (unsweetened)
Apricots (fresh)
Artichokes
Asparagus soup (canned)
Beets
Brussels sprouts
Blackberries
Carrots
Cider
(Coca Cola)
Dandelion greens
(Ginger ale)
Grapefruit
Grapefruit juice
Lambsquarters
Leeks (raw)
Lemon
Lemon juice
Limes
Onions
Oranges
Orange juice
Papayas
Peaches (fresh)
Pea soup (canned)
Prickly pear
Rutabagas
Squash (winter)
Strawberries
Tangerines
Tomato soup (canned)
Vegetable soup (canned)

15% (2/3x)

Apple
Apple Juice
Bean soup (canned)
Blueberries
Clam chowder (canned)
Cheries (sour)
Kumquats
Grapes
Loganberries
Mangos
Mulberries
Nectarines
Papaws
Pears
Pineapple (fresh)
Pineapple juice (unsweetened)
Plums
Raspberries
Salsify

20% (½x)

Banana
Baked beans
Lima beans
Cherries
Corn
Figs (fresh)
Grape juice
Parsnips
Macaroni (cooked)
Peas
Pickles (sweet)
Potato
Prunes (fresh)
Rice (cooked)

1 slice bread equals

⅝ cup 10% vegetable
⅝ cup corn flakes
⅝ cup cooked oatmeal
1 large Matzo
½ cup cooked noodles
½ cup Rice Krispies
⅝ cup Rice Flakes
⅝ cup Puffed Rice
½ cup Wheaties
5 pretzels
6 saltine crackers

2 eggs equals

2 ounces Canadian bacon
¼ cup cottage cheese & 2 teaspoons butter
2 oz. chicken & 2 teaspoons butter
2 oz. lean meat
2 tablespoons peanut butter
4 strips bacon, less ½ teaspoon butter

1 cup — 240 grams — 8 ounces
1 tablespoon — 15 grams — ¼ ounce
1 teaspoon — 5 grams — 1/6 ounce

DISCUSSION

DR. R. L. DEWEES (Wilmington): It is always a great pleasure to hear Dr. MacNeal present this subject, and it sounds certainly as simple as "A-B-C" when he does so!

I would like to emphasize just one point about his discussion of fat people and insulin. Insulin certainly is not indicated in the treatment of the obese patient with diabetes and what is more, if it is given, it is very inefficiently utilized. I am not certain of my figures, but as a resident I was told that as more and more unknown diabetics are discovered the supply and demand for insulin are getting nearer and nearer to each other, so it is conceivable that at some time there might be a shortage of insulin, especially if a lot of obese people not needing it are given insulin. I remember seeing this inefficient use of insulin in an obese person graphically demonstrated in the war, where a very large woman was taking more than 50 units a day. I am not prepared to answer why it was given, but suffice to say, in the absence of any complications this dose of insulin was stopped without further ado, and of course nothing drastic at all happened to the patient since she was on a diet low in carbohydrate and low in calories. These people will invariably, if they adhere to their diet, lose weight down to their ideal weight and their elevated blood sugar will in a period of ten days or possibly two weeks return to normal limits again, if they adhere to their diet. It is not essential, but it is useful sometimes, to determine the renal threshold at which sugar is spilled into the urine. This can be done simply by finding out the level of the blood sugar at which sugar begins to appear in the urine.

Dr. L. B. Flinn (Wilmington): I apologize—I am getting to be the perpetual recurrent discusser. But this will be short, for Dr. MacNeal has taken the subject of the non-hospital management of diabetes and wrapped it up neatly and tied a bow on it. It is the best summary that it has ever been my pleasure to hear, and it is particularly gratifying because I can find nothing about it to disagree with.

There are two short points I would like to emphasize. One, in the non-insulin requiring, so-called "mild" diabetic, it is important that you use all the persuasion possible to have that patient report for observation and follow-up, as it is the more severe and brittle type. It is the mild type which has eventually developed the more serious vascular complications. Why that should be so is not known, but I expect one reason may be that this so-called mild diabetic remains symptom-free, and develops a high postprandial blood sugar a large part of the time which may be a factor until something else is proved true as to the development of the late vascular complications.

Another point is Dr. MacNeal's emphasis on the value of postprandial blood sugars and urines, not only in the treatment of patients but particularly in the diagnosis of diabetes. It is the point which we have all been trying to drive home, particularly in the diagnosis of diabetes, in the last several years, in cooperating with the American Diabetes Association, in trying to find the unknown diabetics throughout the country.

The Committee of the State Society reported last night at the House of Delegates that it recommended this year that the main effort of the Society in cooperating with this new program to discover the unknown diabetics be directed at the medical profession, because it has become evident for the last several years that so many physicians, when a patient was reported to them as having some sugar in their urine or with a blood sugar which was a little high, requested fasting urine and fasting blood sugar on the patient and when this was normal the patient was given the impression he had nothing to worry about and could go ahead about his business.

This, apparently, has also been the opinion of the national organization; it has been felt generally that this realization has not been wide-spread throughout the profession; that it is nevertheless a part in finding the asymptomatic diabetic, to determine a postprandial urine and blood sugar.

Dr. MacNeal: Thank you, Dr. Dewees and Dr. Flinn, for your interest.

One other point that may be worth emphasis is that the obese person who develops any indication, particularly a complication accompanied by fever, such as even a small patch of gangrene on the toe, immediately becomes an insulin-requiring diabetic.

One other point about the mild obese diabetic: that is, the diabetes frequently disappear entirely when and if weight becomes normal, and that this patient then is no longer susceptible to the complications which will terminate life in the more severe and brittle type diabetic.

Thank you again for the opportunity to speak for the Society.

330 S. Ninth Street, Philadelphia, Pa.

PSYCHIATRIC CONSULTATIONS IN A GENERAL HOSPITAL

Sanford G. Rogg, M. D.,*

Foreword

A growing trend is evident in psychiatric orientation, particularly within the Veterans Administration where it is felt that psychiatry merits a closer linking with both the general field of medicine and the community from where its patients come. With this in mind the general hospital of the Administration is truthfully becoming general in that it offers to patients treatment facilities under one roof for most of the ills to which they fall heir. In fulfilling this urgent need of incorporating psychiatric sections in all hospitals possible, relatively untouched fields for observation and study become apparent. This brief paper is simply some remarks arising from my interest in the patients who, while presenting themselves for treatment other than psychiatric, were referred to me for personality difficulties. Close liaison with the other sections of the hospital has allowed them to freely utilize me as they so desire, and also has permitted me to be of assistance to them. With interlacing of ultimate goals, benefit for the patient becomes more obtainable where the major branches of medicine are brought into closer physical relationship, each with the other.

In order to furnish the reader with an adequate and expressive picture, underlying the background of this report, and also to fully outline the boundaries under which it was written a few words of explanation, in general, would appear to be in order.

The Wilmington Veterans Hospital is located in Wilmington, Delaware. It is a new building opened in March of 1950, having a 300 bed capacity for the treatment of Veteran patients. It is staffed by an alert, interested group of physicians, most of whom have had military service and who subsequently decided to specialize in their various fields of medicine and surgery. My function here is to organize and maintain a Neuropsychiatric Service and Mental Hygiene Unit. A subsidiary activity and corollary of any service, naturally, is that it act in a consulting capacity for the other services of the hospital. It is of this ancillary function that I am going to talk in this paper, and the reports furnished below concern only cases which were referred to me for psychiatric consultation from the other services of the hospital. An important part of a consulting service as it relates to the integrated functioning of the hospital naturally depends on the establishment of a good rapport with the other services. In addition to the many intangibles involved in such a situation there are the concrete factors of talking the language of the surgeon and internist, of rendering reports not in esoteric psychiatric terminology, but in such a way that the doctor who does not have a specialized psychiatric training can read and understand what was being said. To attempt to answer, if honestly possible, the questions in the referring doctor's mind regarding his patient and to help him in his task of diagnosing and treating the veteran.

The patients who enter our hospital give an unusual opportunity for observation since it is about five years on the average that most of them have been discharged from military service. A good number have been hospitalized more than once and well studied from many aspects, including the important one of what sort of an individual do we have here, with what malfunctioning, needing what treatment.

As I write, I am careful with my choice of words, I do not wish to use terminology indicative of a division of an individual into parts, since I can truthfully say that I have never seen a body walking around without its mind, nor have I ever seen a mind float into my office without its accompanying body. There is in reality no such thing as a functional illness per se according to the traditional dichotomy of medicine that regards illness as either organic or functional. The individual is a whole with many very complex interrelationships regulating cellular physiology. The "functional" condition of itself is an ephemeral entity, in reality absolutely incapable of existing without an organ that is functioning, and conversely with an organ involved there must be changes within it pro-

---

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

*Chief, Neuropsychiatric Service, Veterans Administration Hospital, Wilmington, Del.

ducing a so-called functional state. Indeed, we in Psychiatry can also realize that even an illness existing on a high level of poor personal integration and inter-personal relationships is inextricably bound as a part of the whole individual. The illness we see is not physical or mental, but a combination of parts, each being influenced by and influencing the others. As I said in a "door-way conversation," 'yes, this patient has an ulcer but it is only the small part of the total. He really is an unhappy, frustrated, hostile person who could not well handle his strong feelings and because of this over a perioid of many years has finally been hospitalized.'

The experiences I quote are from a three months' period of keeping detailed records. I know that three months is really a short period for a valid statistical survey, but because of the number of cases involved (494) I felt statistical justification was present, even within this time element. The referring doctor usually sent his case to me for various reasons: (1) He felt from the beginning that although it was on a different service than the psychiatric, the case was wholly and completely one for the psychiatrist, and that a complete work-up on another service would reveal nothing. I might add that this type of referral was much in the minority. (2) Another type of case I saw was the in-between one where the doctor felt that although he could make a diagnosis, the main difficulty was concerned with the totality of the individual, not confined to a single aspect of an organ in mal-adaptation but to the rhythmicity of the whole. This is the type of case where the patient had by the use of psychological defense mechanisms diverted his personality difficulties to a level acceptable to both himself and to society as represented by his environment. This case is the one where the doctor well realized that diet, medicine, etc. were not going in themselves to effect a course for the better, since the patient had been having exactly that type of treatment for years before coming here. This is the type of case where in my recommendations I would state: "This patient has closely followed a dietary and medicinal regimen for several years. He gets no better, in fact seems to worsen. If improvement is to be hoped for, let us consider the patient, not the illness, requires help. Without aid for his emotional difficulties there is little possibility of achieving a happy ending here, little chance of swerving the worsening course of his illness, little chance of avoiding the eventual ending of an individual so mal-adapted to his environment that he no longer can effectively function."

Some of the patients I saw were extremely resentful and hostile, reacting strongly to the idea that they should be seen by a psychiatrist, considering it a disgrace and shame on a conscious level and having many other feelings on other levels. Some of the patients as they rose to leave after my interview with them would ask: "This talk does not go on my record, does it?" Still, there were others who would ask their physicians or eagerly accept his offer to send them to see the psychiatrist. These patients had the psychological insight and personal courage to be able to allow themselves to openly face the reality situation in their illness after a long course of evasive maneuvers. They were able to realize that the core of their present position was based on emotional difficulties, no matter what their diagnosis or symptoms, and that only by acknowledging the facts as they inalterably presented themselves was help possible. This type of patient incidentally is the one I feel most suitable for therapy and most likely to benefit from it.

The table below gives in concrete form the total arrived at in this study which covered 494 admissions in a three month period.

Table I

		Med. Refer. % of	Surg. Refer. % of				Ref. for Psych.	Predominance		
Med. Adm.	Surg. Adm.	Adm.	Adm.	Prev. Hosp.	W.W. I	W.W. II	Treat.	Psych.	Neuro.	Other
213	281	48%	17%	68%	16%	84%	16%	24%	9%	67%

The above patients were admitted only to the medical and surgical services with initial medical or surgical complaints. Those that their physician felt warranted psychiatric or neurologic investigation were sent to me to be seen only in consultation. Of the cases seen by me, it can be stated with a good deal of certainty that 24% of them had a psychiatric disability to the exclusion of any other factor. The others were a mixture or pure culture of other diagnostic formulations. By mixture I mean a degree of psychiatric incapacity in conjunction with another diagnosis and due to this other diagnosis their stay on the medical or surgical service was warranted.

A break-down of the various diagnoses is furnished below of the cases that were seen in consultation by me:

Table II

Somatization Reaction	Anxiety Reaction	Psychoses	Inadequate Personality	Psychopathic Personality	Emotional Instability	Mental Deficiency	Epilepsy
33	12	10	6	2	1	1	1

The term somatization reaction is used above in preference to the word psychosomatic which, as has been stated, refers to a viewpoint in medicine rather than to certain specified conditions. The anxiety (since this is one of the group of psychoneuroses) is relieved in such reactions by the original impulses being channelled via the autonomic nervous system into visceral organ symptoms and complaints, thereby in the main the anxiety is itself lessened. The long continued visceral disfunction can finally eventuate in structural changes with the passage of time.

Perhaps a summary of one of the cases will demonstrate in a specific manner some of the points mentioned above.

Case # 1

This 31 year old, white, married male, father of two children, was seen at the request of his physician for an evaluation of his psychiatric status regarding its relationship with recurrent diarrheas. This patient was born in a small seaside town. His father died while the patient was in infancy. His mother soon remarried. There is a half-brother and a half-sister of this second union. The family's economic status was extremely precarious and it was fairly common for there to be a lack both of adequate food and clothing in the household. The patient finished the seventh grade of school and then stopped because he neither had enough clothes to go properly dressed to school, and also unless he worked he would not have enough food to satisfy his appetite. As a youngster he usually worked around the docks, picking up whatever odd errand tasks he could in order to earn money. He regarded himself as a "hustler" and even at a fairly early age able to take care of himself. He feels that he got along well with everybody and presented no unusual difficulties in his environment. He worked on the docks until his entry into military service. His health was good and the patient never received medical care for any illnesses. When in military service, on the boat going overseas, the patient began having diarrhea, and was continually troubled by this, having episodes lasting anywhere from three to five days, practically every month during his Army career. The patient was never hospitalized for his gastro-intestinal complaints, but always received paregoric or bismuth from his dispensary. He did notice when having bowel movements with his diarrhea, that he usually had a cramping pain, and that at times it was difficult for him to pass stools. He also describes periods during which his bowel movements were much less than he normally was used to. The patient remarked that he was no more "nervous" than the next soldier, and felt he adjusted fairly well in service, reaching the rank of sergeant prior to discharge in 1945. Following release from military service, he obtained employment at an arsenal deactivating ammunition. This is a Civil Service job and the patient is extremely well satisfied, feeling that it offers him both security and a fairly good salary. Several times he brought out the fact that this was achieved in spite of the extremely meager education he has had. His attacks of diarrhea have continued. The most recent one was about 14 days before admission here when he began experiencing a nauseousness, diarrhea, and flatulence. The patient noticed recently that he has become a "nervous individual" and describes his nervousness as follows: "I just can't keep still. I am always on the go, much more than the other fellow. I can't sit down, I must be about doing something." He has also observed that his emotional upsets will tend to bring on a bout of diarrhea. He and his wife apparently have a fairly good relationship between themselves and there does not appear to be undue tension in his home situation. As the patient continued talking about his work he described his foreman as an extremely difficult individual to get along with. He stated it was impossible for anybody to talk sensibly and logically with this man, and for that reason the employees tend to avoid him as much as they possibly can. The patient has had a few run-ins with him, but has perceived that discretion in this case would be the better part of valor, if he desires to hold his job; therefore, he has swallowed his annoyance and adjusts with his superior on that basis.

Regarding the diagnosis of an irritable colon it is obvious that we are dealing here with a disfunction which results in either a delayed or hypermotive bowel. These two above conditions, being present at different times. Usually no definite lesion can be found allowing the physician to definitely state that an organic condition exists. Apparently the entire pathology lies in a disturbance of intestinal tone and rhythm, deviating from the normally synchronized movements which we tend to regard as a normal healthy condition. The very fact that this patient's complaints indicate both a hyperactive colon with diarrhea and a slow colon with constipation tends to indicate that the causative factors involved are concerned with a disfunctioning autonomic system. The patient's background demonstrates an individual who has never had a stable basis and secure enough environment so that his personality over its long formative period would have been able to develop into a condition approximating what we feel is normality. This patient thrown to a large extent on his own resources, while still fairly young, made for a while a fairly good adjustment as far as we are able to determine. However, with the passing of time this long continued condition of insecurity became more perceptible to him along with the anxiety, which of necessity had to be a corollary of his insecurity. The mechanism of repression kept this anxiety from being expressed as such, and caused it to appear in the guise of a somatization reaction, whose symptomatology appears both logical and well clarified.

Diagnosis: Psychogenic gastro-intestinal reaction, manifested by bouts of diarrhea, tenesmus, griping, cramp-like abdominal pains and constipation.

Recommendation: I am in complete agreement with his physician, who feels that the patient has had eight years of medication without achieving any lasting relief and that it does not appear further drug therapy will be useful. I also concur in the belief that psychiatric help is indicated.

A discussion has been given above of a psychiatrist seeing cases solely in consultation for the medical and surgical departments of a hospital. These cases were usually referred to him when the patient's physician felt that emotional factors played a role to a large extent in his condition. Two statistical tables have been included and a brief summary of one case given. The psychiatrist with his opportunity of obtaining an inclusive picture of the individual quite often can help his colleagues in the other branches of medicine regarding their diagnosis and treatment of patients. This is quite a divergence of viewpoint from the older concept with which the other branches of our profession have tended to regard us. It does represent, however, I feel, a very practical and useful aspect of what can be offered when the patient is regarded as a complete entity.

ENDOCRINOLOGY IN GYNECOLOGICAL PRACTICE*

Richard C. Hayden, M. D.,**
Wilmington, Del.

Endocrinology has become a special division of medicine only in the past ten years and no branch of medicine has grown so quickly or provided such opportunities for scientific investigation. Though the growth of this specialty has been phenomenal, the science of endocrinology is still in its infancy.

To substantiate my last statement let us briefly review some of the highlights of this science. In 1893, dessicated thyroid was first used in the treatment of myxedema, but it was not until 1926 that thyroxine was produced synthetically. Insulin was isolated from the pancreas in 1922, estrogenic preparations appeared on the market about 1932, and testosterone was not discovered and produced synthetically until 1937. So from the preceding remarks we can see how new the science of the endocrine system really is.

Rather than attempt to cover all of the endocrine glands, I shall only briefly mention the advances made in their respective fields.

First, the chief gland of internal secretion, the pituitary. The chief hormones of the pituitary are derived from the anterior lobe and consist of the following: (1) the growth hormone; (2) follicular stimulating hormone; (3) the lutenizing hormone; (4) thyrotropic hormone; (5) the adrenocorticotropic hormone; and (6) proclactin. The hormones of the posterior lobe are not too important at the present time. The thyroid has shown the results of investigative influence under three main headings: (1) anti-thyroid drugs (propylthiouracil); (2) radioactive iodine; (3) protein-bound iodine. The use of radioactive iodine in the treatment of hyperthyroidism has shown excellent results. The knowledge of the adrenal gland has increased tremendously especially between the interrelationship of the pituitary and the adrenal. The adrenal has three important functions: (1) the control of sodium and potassium metabolism; (2) conversion of protein to carbohydrate; (3) the production of androgen and estrogen. Cortisone or compound E is the newest hormone to be extensively investigated.

The testes have not produced any new hormones, but knowledge has been gained about their use, especially as an aid to spermatogenesis and their use in gynecology.

The pancreas and gastro-intestinal hormones have produced nothing extraordinary.

The ovary produces estrogen and progesterone and their relationship to other endocrine glands has been enhanced.

This review has been brief but it has brought out the chief advances in endocrinology up to the present time.

To return to my original topic, I shall discuss the main endocrine glands and their relationship to gynecology.

The thyroid gland shows a definite interrelationship with the ovary but the exact mechanism is unknown. By the evidence gathered, large doses of the thyroid hormone depress the ovary but small doses stimulate it.

Dessicated thyroid, as previously mentioned, is one of the oldest hormones and probably the most commonly used today. There is definite danger in prescribing thyroid extract because one can develop thyroid addiction. It has been shown that the patient with a normal functioning thyroid is the one who can tolerate the largest dosage without ill effects. The hypo or hyperthyroid patient can only tolerate a small amount (1½ grains q.d.) of the hormone. Thus, by giving thyroid extract to the normal individual, a pharmacologic hypothyroid state can be produced.

---

* Presented at St. Francis Hospital Staff Meeting, June 15, 1951

** Assistant in Dept. of Ob-Gyn., St. Francis Hospital.

Before administering dessicated thyroid a definite diagnosis of hypothyroidism should be made by clinical as well as laboratory methods. The dosage should be low at first even in severe cases and increased at 3 to 4 week intervals until a satisfactory level is reached. The action of this hormone is cumulative and no BMR is accurate until 2 months after cessation of therapy. It should be stressed that thyroid extract be taken orally as injections have no superior benefit.

Hypothyroidism will produce both amenorrhea and menorrhagia, but the latter is more common. Hypothyroidism usually produces amenorrhea either by inhibiting the ovary directly or indirectly through the pituitary. The treatment of hyperthyroidism is undergoing modification but still is chiefly surgical. The use of anti-thyroid preparations reduces the toxicity and makes surgery safer. Radioactive iodine may eventually supplement or replace surgery in the treatment of this condition. In pregnancy, the treatment of choice is surgery.

In sterility and habitual abortion where no hypothyroidism exists prescribing small amounts of dessicated thyroid has been helpful. In menstrual disorders, it has relieved some conditions (dysmenorrhea, menorrhagia) probably on the basis of raising the general metabolism of the body.

The next important ductless gland is the ovary and to understand the action of its hormones it is necessary to know the process of menstruation. The old theory of menstruation has been modified today so that we know both estrogent and progesterone however minute are necessary in both proliferative and secretory phases for normal cycles. Of course, a normally functioning pituitary is necessary to produce the ovarian hormones.

There are two main types of estrogens, natural and synthetic. The advantage of natural estrogen is that it is better tolerated, has better metabolic action, but is more expensive than the synthetic type. Progesterone is produced by the corpus luteum and there is no synthetic product.

The main uses of estrogens are:

1. Amenorrhea of the physiologic type where the anatomy is normal. This type of therapy is usually given in cyclic fashion either alone or in combination with progesterone.

2. Functional uterine bleeding is also treated with estrogens alone or in combination with progesterone and androgens.

3. The climacteric or menopause—the treatment of the symptoms of the menopause with estrogens has been abused more than any other condition in gynecology. Very seldom is it necessary to prescribe hormones for this condition and when necessary the dosage should be small and of short duration. Many patients have been treated for years for the climacteric which has been prolonged only by the continued administration of estrogens.

4. Post-partum mastodynia has been treated by estrogens but the rational is not clear and it does not seem to aid strikingly in the reduction of lactation. Simple binding of the breasts usually suffices and does not endanger the patient with future menorrhagia.

5. Prostatic carcinoma has been treated mainly with Stilbesterol and seems to have its chief therapeutic value in reducing pain and metastatic osseous growths. Danger of feminization can occur if the dosage is not carefully regulated.

6. Threatened abortion has been treated in the past few years with increasing weekly doses of Stilbesterol on the assumption that the Stilbesterol produces progesterone.

7. Dysmenorrhea has been treated by the use of estrogens on the theory that only ovulatory cycles produce pain and by inhibiting ovulation, no pain will result.

Progesterone has been used in a wide variety of conditions but is expensive and its therapeutic value questionable. In habitual and threatened abortion, its benefit seems to be equivocal and is rapidly being abandoned. Its use in the treatment of amenorrhea has already been mentioned in connection with estrogen. The greatest value of progesterone therapy has been in functional uterine bleeding. If any meno-metorrhagia is present, the diagnosis should be proved pathologically as well as clinical to be on a functional basis before any hormone therapy should be instituted. Once the diagnosis is established, this condition can be treated in several ways. Estrogen alone or in combination with progesterone has already been mentioned. Progesterone administered for 5 days in cyclic fashion produces amenorrhea only to be followed by withdrawal bleeding 1 to 4 days after cessation of therapy. This bleeding represents the so-called "medical currettage". Recently the combination of estrogen, progesterone and testosterone has been advocated in this condition with a high rate of cure, withdrawal bleeding also occurs with this type of therapy. Experimental work is now being done with progesterone in late fetal death and the toxemias of pregnancy based on a lowered pregnandiol excretion.

The use of androgens in gynecology is becoming more prevalent each year. There are over 40 male sex hormones but the most potent are testosterone propionate parenterally and methyl testosterone for oral administration. The propionate is approximately 3 to 5 times as potent as the oral type. The dosage of androgens must be carefully regulated and individualized in females to prevent masculinization. The main indications for androgenic therapy in females are:

1. Functional Uterine Bleeding—the therapy has already been mentioned.

2. Primary dysmenorrhea—the rational of this type of therapy is probably on the basis of inhibiting the ovary and preventing ovulation. The results are encouraging but depend a great deal on the psychogenic background of the individual.

3. Endometriosis—this condition is relieved by the direct action of androgen on the ovaries causing regression in the ectopic endometrium. Many times this condition prevails without subjective symptoms and no treatment is needed. Androgen therapy should be used in young women who have had conservative operation for endometriosis but still have residual areas remaining in the pelvis. It has a definite place in the pre-operative management when there is definite bowel involvement.

4. Carcinoma of the Breast—the theory that carcinoma of the breast was stimulated by estrogens brought about the use of androgens in this condition. Experimental work is still being done on the use of androgens in breast cancer but some tentative conclusions have been reached. (A) Androgens may be used as palliative agents for advanced breast cancer in women at any stage of life (B) Subjective improvement occurs more frequently than objective (C) Best results are derived in osseous metastasis but no effect is produced on soft tissue growths. Paradoxically estrogens have also been used in the treatment of breast cancer but only in postmenopausal women. If estrogen is given to women with breast malignancy in the pre or menopausal group, acceleration of the neoplasm occurs.

5. Menopause—this condition is aided by testosterone by relieving the vasomotor symptoms and inhibiting the estrogens. It also raises the protein anabolism and has a definite psycho biological effect.

6. Frigidity—this condition is improved by the administration of androgen because it causes an increased susceptibility to psychic stimulation and increased sensitivity of the genitalia.

7. Post-partum Mastalgia—testosterone decreases the engorgement by reducing the vascular stasis and intestitial fluid.

8. Malnutrition and Osteomalacia—these conditions are frequently seen in pre as well as postoperative states and because of the protein anabolic effect, testosterone improves these conditions.

Finally, we come to the master gland of the endocrine system, the pituitary. For years the prevalent opinion was that the pituitary controlled the secretions of the other endocrine glands but today that hypothesis has been modified. We believe the pituitary to act as a moderator or proctor over the hormones of the other endocrine glands but not to control their production.

The use of the hormones of the pituitary is limited for several reasons. First, the source of human pituitary extracts is practically unknown and certainly not available for clinical use. The hormones produced commercially are of animal origin and cause antigen-production in the human thus reducing their effectiveness. The chief hormones of the anterior lobe of the pituitary used in gynecology are the gonadotropins.

Unfortunately, the pituitary gonadotropin cannot be produced from the human; however, experimental evidence has shown this hormone to be present in the urine of postmenopausal and castrated women. The manner in which the gonadotropin can be extracted from the urine in pure form is too expensive and complicated to be of clinical value. The main use of the pituitary gonadotropin is in amenorrhea in stimulating the ovary and many times it has produced menstruation. This hormone is definitely a follicular stimulating one and has no value in producing ovulation. The other gonadotropin which is found in the urine and placenta of pregnant women is the chorionic or leutotropic hormone. It is the hormone responsible for the positive pregnancy tests and a false positive may be obtained by a sufficient dosage of this hormone injected into a woman. This hormone is definitely leutotropic and produces an excessive excretion of pregnandiol in women. Chorionic gonadotropin has its chief value in treating amenorrhea and anovulatory menstrual cycles in combination with the pituitary gonadotropin. This type of therapy is substitutional and rarely curative but sometimes does produce normal menstruation.

Summary

The latest advances in endocrinology have been listed and the controversial subjects involved have been omitted or only briefly mentioned. The main endocrine glands and their hormones used in gynecology have been reviewed. Hormone treatment, it must be remembered, is substitutional and not curative therapy. The results of hormone therapy in the treatment of metabolic disorders are encouraging but more cures will be achieved as the knowledge of the endocrine system is unfolded.

TRACHEOTOMY IN POLIOMYELTIS

George J. Boines, M. D.,*
Wilmington, Del.

Tracheotomy was first used in poliomyelitis[1] in pharyngeal paralysis for the prevention of: 1. cyanosis; 2. apprehensiveness; 3. choking attacks; and 4. aspiration of secretions into the bronchial tree.

Tracheotomy has been done as a prophylactic procedure[2] to prevent: 1. anoxia; 2. atelectasis; 3. pulmonary edema; 4. pneumonitis; 5. acute laryngeal spasm; and 6. suction of secretions in the bulbar patient.

Tracheotomy has been performed in bulbar poliomyelitis with respiratory difficulty[3] which was: 1. not relieved by postural drainage; 2. not relieved by aspiration of secretions; 3. unable to swallow throat secretions; 4. unable to cough because of loss of the gag reflex of the pharynx; 5. unable to cough because of chest paralysis; 6. unable to talk because of vocal cord paralysis; and 7. a possible candidate for the respirator—purely a prophylactic measure.

The only true physiological indication for tracheotomy is paralysis of the larynx and the vocal cords[4, 5, 6]; this condition produces an upper respiratory tract obstruction. The early accumulation of oral secretions in the retropharynx is not an indication because this condition may be managed successfully with adequate experienced medical and nursing personnel. In the absence of experienced personnel the necessity for tracheotomy must be decided upon as the emergency arises.

The technique for tracheotomy[7, 8, 9] should be carefully planned, performed by an experienced surgeon, and should take into account the following points: 1. if the patient is in the respirator, keep him out of the machine with the aid of the Electro Phrenic Respirator or with an intermittent positive pressure machine; 2. insert a bronchoscope and do the operation over the bronchoscope; 3. give curare[10] to relax neck muscles so that the head can be freely movable; 4. endotracheal anesthesia and oxygen may be administered; 5. the second tracheal ring is cut; 6. use the largest tracheotomy tube possible for the size of the patient; the larger tube facilitates the flow of oxygen, produces less crust formation, and there is less trouble with obstruction; 7. humidify the air; 8. have constant experienced nurse to suction the tube and the pharynx of the patient in order to eliminate the passage of salivary secretions down the oropharynx into the trachea; 9. give oxygen thru the tracheotomy tube, 2-3 liters per minute, thru water; 10. feed patient intravenously with sufficient caloric intake; give blood transfusions and protolysates; 11. remove tracheotomy tube as soon as possible.

---

* Attending Chief of Communicable Diseases, St. Francis and Wilmington General Hospitals.
Lecturer Department of Biological Sciences, University of Delaware.

Opinions differ as to the life-saving merits of tracheotomy because of the many difficulties and complications which arise following this procedure in acute poliomyelitis. The most important objections may be outlined as follows: 1. the bulbar poliomyelitis patient is already weak and devitalized when another burden and fear of the tracheotomy are added; the loss of the power of speech add to the apprehensiveness; 2. there is some difficulty in feeding the patient by mouth while the tube is present. Gavage has its dangers of irritation and producing regurgitation of stomach contents into the trachea; 3. special equipment and nursing care are needed for the administration of humidified air, oxygen and for suctioning. Children must be kept well restrained in order to prevent them from pulling the tube out; 4. with good medical and nursing care the power of swallowing returns within four to seven days in most patients. The return of swallowing with tracheotomy takes twenty-one days or longer; 5. constant experienced nursing care around the clock is necessary to avoid sudden suffocation due to obstruction of the tube, since the patient cannot call for help. Suction of the pharynx must still be continued to prevent saliva from entering the treachea and lung. Administration of oxygen and suction of secretions is difficult to carry out efficiently thru the tracheotomy tube; 6. there is a frequent incidence of crust formation in the trachea by the tube; this is uncomfortable and reduces the size of the airway. The required constant suctioning of the trachea by a catheter produces trauma, scarring, and secondary infection. Stenosis of the trachea may require prolonged treatment for dilatation. Delayed healing of tracheotomy wounds is not frequent but it may add to the discomfort of the patient; 7. repeated bronchoscopy may be necessary thru the tracheotomy opening if obstruction cannot be relieved by suction; 8. atelectasis, pneumothorax, pulmonary emphysema, pulmonary edema, and pneumonia are frequent complications following tracheotomy; 9. there is always the inevitable incidence of surgical risk; and 10. actually the mortality of bulbar poliomyelitics has not been reduced by tracheotomy; in tracheotomized patients, the mortality has been from 40% to over 50%; it is stated that many of the patients were saved by tracheotomy in instances where nursing care was inadequate to care for the emergency needs of the bulbar patient. There is no question that tracheotomy performed where obstruction of the air way cannot be relieved by other methods is life saving. In our opinion good medical and nursing care by specially trained personnel will save more lives in bulbar poliomyelitis than any surgical procedures.

Since 1942 67 bulbar poliomyelitis patients have been treated in the Doris Memorial Contagious Unit of the Wilmington General Hospital. Thirteen, or 20% of these, died due to involvement of the respiratory center. These cases are tabulated (Table 1) in order to show and stress the lapse of time between onset, admission to the hospital, and death. Of the remaining 54 cases in this group, 26 had severe involvement with complications, but recovered without the use of tracheotomy or respirator; the remaining 28 patients had moderate involvement and they all made an excellent recovery.

TABLE 1

BULBAR POLIOMYELITIS DEATHS

No.	Sex	Age	Lapsed Days Onset to Adm.	Involvement	Lapsed Days Adm. t Death
1.	F	39	7	Resp., All extremities	2
2.	F	29	2	Respiratory	1
3.	F	9	4	Respiratory	1
4.	M	12	1	Resp. Center All extremities	15
5.	F	19	5	Resp. Center	1½
6.	M	4	1	All extremities Resp. Center	1
7.	F	39	3	L. Upper Ext. Both Lower Ex. Face, Swallowing	2½
8.	F	8	4	Encephalitic Resp. Center,	1
9.	M	33	8	Face, L. Lower Ex. Resp. Center	2
10.	F	19	7	Both Lower Ex. Resp. Center	2
11.	M	11	6	All Extremities Resp. Center	5
12.	M	6	1	All Extremities, Circ. and Resp. Center	2
13.	M	17	1	All Extremities Resp. Center	4

Note that five patients expired within 24 hours, and four within 48 hours of admission.

Summary

Tracheotomy in poliomeylitis is discussed. Its indications, technique, and disadvantages are outlined. A summary of our experience with bulbar poliomeylitis without tracheotomy is presented.

REFERENCES

1. Wilson, J. I.: Acute Anterior Poliomyelitis, New Eng. J. M., 206: 887, April 1932.
2. Priest, R. E., Boies, L. R., and Goltz, N. F.: Tracheotomy in Bulbar-Poliomyelitis, Ann. O.R. & L., 56: 250 (June) 1947.
3. Baker, A. B.: Bulbar Poliomyelitis, Its Diagnosis and Treatment, Ill. Med. Jour. 92: 160, (Sept.) 1947.
4. Galloway, T. C. and Seifert, M. H.: Bulbar Poliomyelitis, Favorable Results in Its Treatment as a Problem in Respiratory Obstruction, J.A.M.A. 14: 1, (Sept.) 1949.
5. Stimson, P. M.: The Diagnosis and Treatment of Bulbar Poliomyelitis, South. Med. Jour. 42: 415, (May) 1949.
6. Medovy, H.: Bulbar Poliomeylitis, A Medical Emergency, Manitoba Med. Rev. 30: 145.
7. Miller, A. H. and Buck, L. S.: Tracheotomy in Bulbar Poliomeylitis, Cal. Med. 72: (Jan.) 1950.
8. Kottke, F. J. and Kubicek, W. G.: The Patient with Bulbar-Respiratory Poliomyelitis, Amer. Jour. Nurs., 49: (June) 1949.
9. University of Colorado Medical Center, Poliomyelitis Teaching Unit, Nursing Care of the Poliomyelitis Patient, pp. 12-15. Also, Procedures in the Routine Care of Bulbar Respiratory Patients.
10. Boines, G. J.: Treatment of Acute Poliomyelitis with Emphasis on Muscle Relaxation and Nutrition, Del. St. Med. Jour. 22: 270 (Sept.) 1950.

TUBERCULOSIS TODAY

G. Taggart Evans,*
Wilmington, Del.

Help Fight TB

Buy Christmas Seals

The spectacular decline in the tuberculosis mortality rate from the second cause of death in 1900 to the seventh cause in 1940 led some of the most conservative scientists to predict the virtual eradication of the disease by 1950. This has not been the case.

Tuberculosis authorities estimate that there are 500,000 men, women, and children with tuberculosis in the country. The disease of half of them has been detected. The other half—the hidden 250,000 cases—represent people who are losing their own health and may be infecting others. They must be found, diagnosed, and put under treatment before the battle against tuberculosis can be won.

For it can be won. *Tuberculosis can be cured.* Bed rest, preferably in a tuberculosis hospital or sanatorium, is the imperative first step. Since the disease can be treated successfully in any climate, the patient need not leave his family and "go West" as in the old, uninformed days. He can go to a hospital near his home, within visiting distance of his relatives and friends.

Bed rest in a good tuberculosis hospital may be enough to cure his tuberculosis. But certain types of the disease may not heal completely on bed rest alone. In those cases, rest may be combined with drugs or surgery, or both.

Streptomycin, developed from a soil organism, was the first drug to offer real promise in the treatment of tuberculosis and is still the drug of choice.

But streptomycin is not a *cure* for tuberculosis. Nor is its use always advisable. What the scientists are seeking is the ideal drug which would bring results rapidly, yet be safe, and without such uncomfortable side effects as dizziness, nausea, and deafness. It should not favor the building up of resistance by the tuberculosis germ, as does streptomycin. When this happens, the drug is no longer effective. To combat this difficulty, streptomycin is usually given in combination with another drug. One of the most successful is para-aminosalicylic acid, PAS for short. PAS seems less successful than streptomycin in suppressing tuberculosis. But it is capable of inhibiting the growth of the tuberculosis germs which have become resistant to streptomycin.

Certain types of tuberculosis, especially those with lung cavity, may not heal completely on bed rest and drugs alone. In those cases, additional relaxation must be given by some form of "collapse therapy".

These range from the relatively simple temporary collapse measures, such an pneumo-

---

*Executive Secretary, Delaware Anti-Tuberculosis Society.

LIBRARY OF THE

thorax and pneumoperitoneum, to permanent collapse of the diseased area of the lung by thoracoplasty.

In cases which cannot be controlled by the simpler collapse methods, resort is made to more radical lung surgery, such as lobectomy, segmental resection and pneumonectomy. Under ideal conditions in the hands of a skilled operator, removal of lung tissue now carries little more risk than the removal of segments from the stomach or intestines.

New drugs and new techniques make a good start in conquering tuberculosis. But no specialist is entirely satisfied with the status of surgery or chemotherapy for this disease. Medical research is being sponsored by the U. S. Public Health Service and other official agencies, by the voluntary tuberculosis associations, by hospitals and universities, by industry and private foundations. No organization is more active in this respect than the National Tuberculosis Association and its 3,000 affiliated associations, who receive their financial support from the annual sale of Christmas Seals.

Since 1907 approximately $265,000,000 has been raised by the sales of the familiar seal bearing the double-barred cross. This year, at least one per cent of every 1951 Christmas Seal purchase will be used for research against tuberculosis in the most extensive medical and social research program in the history of the National Tuberculosis Association. The work of 35 investigators in 14 states and the District of Columbia will cover every aspect of the disease from a better understanding of its cause to better methods of treatment.

These studies are being carried on in the laboratory and in the hospital. Among the tools are the microscope and the test tube. Another important tool is money—sufficient funds to carry out the projects. Proceeds from the 1951 Christmas Seal drive may turn today's ideas and hopes in medical research to tomorrow's most effective measures in the prevention and cure of the disease.

It is not too much to hope that through the Christmas Seals more powerful curative agents will be discovered which will, alone or in combination with already known methods, save lives that would otherwise be lost.

SPOTLIGHT ON 1952

In a program expected to focus a dramatic, bipartisan spotlight on the major national issue of 1952, Senator Robert A. Taft, Ohio Republican, and Senator Harry F. Byrd, Virginia Democrat, will share the platform Wednesday evening, December 5, at an open meeting of the House of Delegates of the American Medical Association in the Los Angeles Shrine Auditorium.

Announcing the program recently, Dr. George F. Lull, Secretary and General Manager of the AMA, said the addresses by Senators Taft and Byrd will be carried nationwide by the radio network of the American Broadcasting Company.

The Los Angeles meeting, a special event at the Fifth Annual Clinical Session of the AMA, will be open without charge to the general public, Dr. Lull said, and is expected to attract a capacity crowd of 6,800 people. It will be attended by scores of Hollywood celebrities, political figures, public officials, and civic leaders.

"Senator Taft and Senator Byrd will have complete freedom to discuss both domestic and international issues as they view them", said Dr. Lull. "We have reason to believe that both men will deal with the major issues of the 1952 political campaign, including the issue of socialized medicine and the over-all trend toward State Socialism in this country.

"The American Medical Association is a nonpartisan, professional organization with a sincere concern over the basic issues confronting the American people. We believe that those issues transcend all political party lines as they stand today. We therefore consider it highly fitting to provide this forum for two outstanding leaders in the two major parties. We believe that what Senators Taft and Byrd say on December 5 in Los Angeles will have a significant influence in shaping the great debate of 1952."

The public meeting will start at 7:00 p.m. in Los Angeles. The ABC radio broadcast will be heard at 9:00 p.m. local time in all parts of the country except in the eastern time zone, where it will be scheduled for 10:00 p.m.

✚ Editorials ✚

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building

Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place

M. A. Tarumianz, M. D. ....Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given. The reproduction in whole or in part, for commercial purposes, of articles appearing in The Journal will not be permitted.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 21 November, 1951 No. 11

One Man We Don't Want

Governor Earl Warren of California, speaking on a CBS radio broadcast on November 4th, again advocated the enactment of a system of Compulsory Health Insurance.

Warren, three times defeated in efforts to inaugurate such a system in California, made it clear that he now favors a system of Government-directed Medical Care for all the American people.

The Governor denied that his program was Socialized Medicine, but the plan he has advocated in California closely parallels the program of Socialized Medicine advocated by President Truman and Federal Security Administrator Oscar Ewing.

The full text of Governor Warren's statement follows:

"It is not sufficient to say that America has developed the finest medical care in the world, even though this is true. We still must find a way to make it accessible to all of our people.

"The well-to-do can pay for good medical care; the indigent receive it from public agencies and through the charitable work of the doctor; but the self-reliant worker, the man in the average or lower income bracket who contributes so much to building our country, and whose greatest ambition and hope is to raise a good American family, cannot bear the financial catastrophe of serious illness.

"I have advocated for California a program of pre-paid medical care as a possible solution. The proposal has been called socialized medicine by some who are opposed to it. It even has been given the ugly name of communism by others. It is neither. Nor is it statism as practised in Germany or socialism as practised in England.

"I have never been and am not now in favor of socialized medicine. I do not believe in socialism, but I do believe in social progress, which has been the hallmark and the glory of the American nation from its beginning.

"I am convinced we will enter upon a new era of progress in the cause of health when we make it possible for every one of our people to protect himself and his family from the economic disaster of backbreaking hospital and medical bills.

"I believe it is the responsibility of the states to undertake to help doctors, hospitals and the public they serve in the solution of what, up to the present time, has been an insoluble problem. I have never held out my proposal as the only solution. It is my proposal until someone offers a better one.

"I am firmly of the belief, however, that our American system is sufficiently adaptable to make possible the solution of the problem of medical care without doing violence to the political, economic or professional concept of all the people who are sincerely interested in the problem."

As you undoubtedly know, Governor Warren has been defeated repeatedly in attempts to secure the enactment of a program of Socialized Medicine in the State of California, but he now makes it clear that he believes such a program should encompass all the American people. It is significant that he made this statement only a few days before announcing his candidacy for President.

You will note that Governor Warren, in common with President Truman and Federal Security Administrator Oscar Ewing, repudiates the term "socialized medicine", while warmly embracing the substance. That has become accepted practice among those who seek a politically-dominated medical system, however, and no one should be misled by it.

Governor Warren, in his most recent statements, as in the past, has completely ignored the tremendous strides made by voluntary health insurance in providing prepaid medical care for the American people. This is consistent with his position throughout the long fight in California on this issue, for he has always either ignored or belittled the progress of the voluntary systems, despite the fact that there are now more Californians enrolled in voluntary health insurance plans than

Warren promised to provide for under his scheme of compulsory health insurance. Even coverage for catastrophic illness, to which Warren refers in his CBS statement, now is provided by California Physicians Service in his own state, but the Governor, for reasons best known to himself, refuses to admit that anyone other than politicians can provide the people with adequate prepaid medical care.

On the issue of compulsory health insurance, Governor Warren is in the Truman-Ewing camp just as surely as if he were formally enrolled in it which, incidentally, President Truman has indicated he should be.

In reply to Warren's statement, Dr. John W. Cline, President, AMA, and Dr. Elmer L. Henderson, Chairman, Coordinating Committee, AMA, make a joint reply, in part, as follows:

We have heard before now many criticisms in Delaware of Governor Warren's attitude toward medical care, and while perhaps it was not the major reason for the defeat in 1948 of the Dewey-Warren ticket, it was undoubtedly an important factor. Since Warren's recent statement indicates that he has learned absolutely nothing from the exposes of the tendency of the present administration toward socialistic doctrines and a socialistic state, we can say, without fear of contradiction, that as a candidate for the Presidency of the United States, regardless of his political party or affiliations, the doctors of Delaware want no part of Earl Warren. What the doctors of this, the first state in the American Union, feel about Warren as an anti-private-practice candidate is certainly shared by the doctors in every other state of the Union, especially his own, California. In other words, it is safe to say that the doctors of America want no part of Earl Warren on any ticket.

BOOK REVIEWS

Who Walk Alone. By Perry Burgess. Pp. 312. Cloth. Price, $3.50. New York: Henry Holt and Company, 1950.

This is the real story of a sufferer of Hansen's Disease (leprosy).

A special edition of this very enlightening book has been distributed by the Leonard Wood Memorial for the Eradication of Leprosy for the purpose of interesting readers in the plight of the lepers, and the scientific efforts being made to solve one of the oldest diseases.

The main character in the book is an American soldier who served in the Spanish-American War in the Philippines and who many years after he returned home became a leper. As his trials and tribulations are unfolded one realizes that even to-day people in general have a horrible fear of associating with any one diagnosed as a leper. The disease is far less dangerous to public health than many other diseases and those suffering from it should be treated as sick people, not as criminals. The disease does not kill the patient but often causes certain deformities which disable him.

There are two main types of the disease: the tuberculoid, which is not infectious; and the lepromatous, which is considered open and infectious. In this latter type the bacilli are present in nasal discharges and scrapings from the skin; spread is possible thru inhalation or swallowing of the germs, or the germs may enter healthy persons thru wounds in the skin. It is usually contracted in Childhood but adults can also contract it. A higher attack rate among males is the rule for the lepromatous form of the disease. A very large proportion of patients bear little or no outer signs of their affliction.

It is not generally known that Hansen's disease is not inherited and is not congenital. Doctors, nurses, technicians and other personnel working in leprosaria rarely contract this fearful disease; and infection of husband or wife from an infected spouse is rare.

Leprosy is common in tropical and subtropical areas with residual areas of low prevalence in cooler regions. Some cases arise in Florida, Louisiana, Texas, and Southern California. There are about three to five million cases in the world.

Physicians will find this book very informative as far as the life of a sufferer of Hansen's disease in a leper colony is concerned. It will also aid in sharpening one's suspicions for an early diagnosis in such a patient because, as the story brings out so well, a patient wanders from doctor to doctor and from one hospital to another without a diagnosis of this old disease which has horrified people for centuries all over the world. A skin biopsy of the anesthetic lesions together with a nasal smear examined for the acid fast bacillus of Hansen will usually furnish the diagnosis.

The attention which is now being given to scientific studies of the nature and control of Hansen's disease is the most encouraging factor. The Leonard Wood Memorial for the Eradication of Leprosy depends entirely on contributions from the general public for its financial support.

A Text-Book of X-Ray Diagnosis. By British Authors, in 4 vols. Edited by S. Cochrane Shanks, M. D., Director, X-ray Diagnostic Department, University College Hospital, London; and Peter Kerley, M. D., Director, X-Ray Department, Westminster Hospital, and Radiologist, Royal Chest Hospital, London. Published by W. B. Saunders & Co. Philadelphia and London, 1951.

This is a second edition of a standard English reference in x-ray diagnosis. The first edition was by S. C. Shanks, P. Kerley and E. W. Twining, published in 1938 and consisted of three volumes.

The present edition has been arranged in four volumes because of the additional material presented, as follows:

I—Head and Neck; II—Cardiovascular and Respiratory Systems; III—Alimentary Tract, Biliary Tract, Abdomen, Obstetrics and Gynecology, Urinary Tract; IV—Bones, Joints and Soft Tissues.

The rearrangement of material should interest many specialists who would be interested in only one branch of diagnostic roentgenology.

The section on Heart has been increased about 50% in size and numerous new illustrations have been added, including several sketches in color. Sections on Angiocardiography and Electrokymography have been added but are limited in their scope of discussion.

The volume on Abdomen has been changed very little, but a new section on the Alimentary Tract of Infants and Children has been added. In this volume the section on Radiology in Obstetrics has been greatly extended and is quite comprehensive, including a discussion of all the major techniques for examining the maternal pelvis.

In the first volume the discussion on Cerebral Angiography has been greatly improved and enlarged.

I feel that this is one of the best sets of reference books in roentgenology and should be a part of the library of every roentgenologist. The individual volumes should be of great interest to other specialists.

Technical Methods for The Technician. By Anson L. Brown, M. D. Fourth edition. Pp. 784, illustrated. Fabricoid. Price $10.00. Columbus, Ohio: Anson L. Brown, Incorporated, 1951.

This book is designed as a work book for laboratory training students of the high school level. In an attempt to be simple the author has failed to produce a well balanced book. His approach is so elementary that the results are nothing more than a cook book.

The chemistry procedures are out-dated and incomplete. Hematology is inaccurate and elementary and the terminology is out-dated. Bacteriology is ill planned and important methods are only alluded to. The serological procedures appear adequate but are not entirely up-to-date. The blood bank section is inadequate. The histology is out of date and unscientifically presented. The book is certainly not to be recommended for a modern medical laboratory, student, or physician.

A Bibliography of Infantile Paralysis: 1789-1949. Prepared under the direction of the National Foundation for Infantile Paralysis, Inc. Edited by Morris Fishbein, M.D., Ella M. Salmonsen, and Ludwig Hektoen, M.D. Second Edition. Cloth. J. B. Lippincott Co., Philadelphia; 1951.

This is the most complete volume of references on anterior poliomyelitis. They are arranged alphabetically for each year beginning in 1789 and including 1949, with a complete index following the references. A brief abstract of each article is also given.

Perhaps the most useful section of the book is the detailed subject index which adds to the practical value of this voluminous reference book on the subject of poliomyelitis.

1789—MEDICAL SOCIETY OF DELAWARE—1951

OFFICERS

President, Charles E. Wagner, Wilmington
President-Elect, Ervin L. Stambaugh, Lewes
Secretary, Andrew M. Gehret, Wilmington
Vice-President, Benjamin F. Burton, Dover
Treasurer, Joseph M. Messick, Wilmington
Executive Secretary. W. Edwin Bird, M. D., 822 N. American Bldg., Wilmington

American Medical Association (1951) Delegate: James Beebe, Lewes
Alternate: C. E. Wagner, Wilmington
Representative to Delaware Academy of Medicine, W O. LaMotte. Wilmington

STANDING COMMITTEES

Scientific Work
R. W. Comegys, Clayton
O. A. James, Milford
A. M. Gehret, Wilmington

Medical Education
R. O. Y. Warren, Wilmington
J. L. Fox, Seaford
H. W. Smith, Harrington

Publication
W. E. Bird, Wilmington
M. A. Tarumianz, Farnhurst
A. M. Gehret, Wilmington

Public Laws
J. S. McDaniel, Dover
J. W. Lynch, Seaford
E. R. Mayerberg, Wilmington
J. D. Niles, Middletown
V. D. Washburn, Wilmington

Budget
J. M. Messick, Wilmington
Charles Levy, Wilmington
M. A. Tarumianz, Farnhurst
W. T. Chipman, Harrington
J. R. Elliott, Laurel

SPECIAL COMMITTEES

Advisory, Woman's Auxiliary
Roger Murray, Wilmington
Charles Levy, Wilmington
J. M. Messick, Wilmington
J. J. Lazzeri, Smyrna
J. R. Elliott, Laurel

Cancer
D. M. Gay, Wilmington
J. V. Casella, Wilmington
J. F. Hynes, Wilmington
E. G. Laird, Wilmington
W. W. Lattomus, Wilmington
C. J. Prickett, Smyrna
R. R. Layton, Dover
James Beebe, Lewes
Bruce Barnes, Seaford

Tuberculosis
L. D. Phillips, Marshallton
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
J. S. McDaniel, Jr., Milford
L. C. McGee, Wilmington
J. M. Messick, Wilmington
C. J. Prickett, Smyrna
William Marshall, Jr., Milford
C. M. Moyer, Laurel

SPECIAL COMMITTEES

Maternal and Infant Mortality
A. H. Williams, Laurel
C. T. Lawrence, Jr., Wilmington
C. L. Hudiburg, Wilmington
S. W. Rennie, Wilmington
R. O. Y. Warren, Wilmington
B. F. Burton, Dover

Mental Health
G. W. K. Forrest, Wilmington
J. S. McDaniel, Jr., Dover
O. V. James, Milford

Industrial Health
L. C. McGee, Wilmington
G. H. Gehrmann, Wilmington
H. L. Springer, Wilmington
E. H. Mercer, Dover
H. V'P Wilson, Dover
D. L. Bice, Seaford
A. C. Smoot, Georgetown

Vocational Rehabilitation
James Beebe, Lewes
G. A. Beatty, Wilmington
I. M. Flinn, Wilmington
T. B. Strange, Wilmington
W. C. Pritchard, Smyrna

Heart Disease
E. R. Miller, Wilmington
A. H. Clagett, Jr., Wilmington
E. M. Krieger, Wilmington
F. R. Everett, Dover
R. L. Klingel, Lewes

Diabetes
L. B. Flinn, Wilmington
J. R. Durham, Jr., Wilmington
Charles Levy, Wilmington.
L. L. Fitchett, Milford

Arthritis
A. J. Heather, Wilmington
I. M. Flinn, Wilmington
A. R. Shands, Wilmington
C. C. Fooks, Milford
O. A. James, Milford

Health & Sanitation
E. R. Mayerberg, Wilmington
G. A. Beatty, Wilmington
V. D. Washburn, Wilmington
W. T. Chipman, Harrington
H. V'P. Wilson, Dover
Bruce Barnes, Seaford
E. L. Stambangh, Lewes

Fees for Welfare Patients
R. W. Comegys, Clayton
A. R. Crutchley, Middletown
J. W. Lynch, Seaford

SPECIAL COMMITTEES

Medical Service and Public Relations
E. R. Mayerberg, Wilmington
B. M. Allen, Wilmington
W. O LaMotte, Wilmington
C. L. Munson, Wilmington
W. M. Pierson, Wilmington
J. S McDaniel, Dover
H. V. P. Wilson, Dover
J. W. Lynch, Seaford
O. A. James, Milford

Rural Medical Service
J. R. Downes, Newark
C. R. Donoho, Newark
J. D. Niles, Middletown
C. J. Prickett, Smyrna
H. W. Smith, Harrington
Bruce Barnes, Seaford
H. S. Riggin, Seaford

Care of Colored People
H. T. McGuire, New Castle
Conwell Banton, Wilmington
S. G. Elbert, Jr., Wilmington
I. J. MacCollum, Wyoming
J. L. Fox, Seaford

National Emergency Medical Service
J. R. Beck, Wilmington
C. L. Munson, Wilmington
W. F. Preston, Wilmington
S. H. Stradley, Wilmington
V. D. Washburn, Wilmington

Medical Economics
Ira Burns, Wilmington
J. S. McDaniel, Jr., Dover
J. E. Marvil, Laurel

Hospitals and Practice of Medicine
J. W. Howard, Wilmington
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
W. O. LaMotte, Wilmington
C. E. Wagner, Wilmington
J. S. McDaniel, Dover
J. B. Waples, Georgetown

Social Hygiene
A. D. King Wilmington
E. H. Mercer, Dover
James Beebe, Jr., Lewes

Grievance Board
G. W. K. Forrest, Wilmington
I. L. Chipman, Wilmington
J. D. Niles, Middletown
I. J. MacCollum, Wyoming
James Beebe, Lewes

WOMAN'S AUXILIARY

Mrs. Douglas M. Gay, *President*, Wilmington
Mrs. S. W. Rennie, *President-elect*, Wilmington
Mrs. E. T. O'Donnell, *Corresponding Secretary*, Wilmington
Mrs. Andrew M. Gehret, *Recording Secretary*, Wilmington
Mrs. Lawrence W. Fitchett, *Treasurer*, Milford

NEW CASTLE COUNTY MEDICAL SOCIETY

Meets Third Tuesday

V. D. Washburn, *President*
W. W. Lattomus, *President-elect*
S. H. Stradley, Jr., *Vice-President*
H. H. Stroud, *Secretary*
C. M. Bancroft, *Treasurer*
E. C. Syrovatka, *Executive Secretary*

Councilors (1952): L. C. McGee, H. T. McGnire, J. C. Pierson.

Delegates (1951): E. M. Bohan, Ira Burns, Junius A. Giles, A. D. King, E. G. Laird, W. O. LaMotte, Sr., Charles Maroney, E. M. Mayerberg, W. M. Pierson, Edward Parvis, O. N. Stern, H. H. Stroud, M. A. Tarumianz.

Alternates (1951): Steven Bartoshesky, Joseph Beck, Allen Fleming, Mildred Forman, David J. King, A. G. Lessey, Wm. T. McLane, Douglas Sanders, Paul Shaw, Roger B. Thomas, R. O. Y. Warren

Delegates (1951-52): N. L. Cannon, I. L. Chipman, Sr., J. A Giles, A. L Heck, Charles Levy, C. L. Munson, M. B. Pennington, J. C Pierson, S. H. Stradley, Jr., G W Vaughn, V. D. Washburn

Alternates (1951-52): L. V. Anderson, R E. Allen, J. W. Barnhart, J. M. Barsky, Jr. W W. Briggs, Italo Charamella, J. A. Chrzanowski, C. T. Lawrence, F A Jones, C P. Johnson, T. E. Resnick, F. S Skura, H. A. Tarrant.

MEDICAL COUNCIL OF DELAWARE

Hon. Charles S Richards, *President*; Joseph S McDaniel. M D., *Secretary* Wallace M Johnson

KENT COUNTY MEDICAL SOCIETY

Meets First Wednesday

R. R. Layton, Jr., *President*, Dover
J. B. Baker, *Vice-President*, Milford
J. S. McDaniel, Jr., *Secretary-Treasurer*, Dover

Councilors: C. J. Prickett, Smyrna and Wm. Marshall, Milford.

Delegates: H. V. P. Wilson, Dover, and I. J. MacCollum, Wyoming.

Alternates: J. S. McDaniel, Dover, and H. W. Smith, Harrington.

DELAWARE STATE DENTAL SOCIETY

J. S. Mack, *President*, Seaford
J. F. Maguire, *1st V. P.*, Wilmington
H L. Kurfirst, *2nd V. P.*, Wilmington
James Krygier, *Secretary*, Wilmington
Louis Kreshtool, *Treasurer*, Wilmington
P. E. Musselman, *Delegate A.D.A.*, Newark.
Clyde Nelson, *Alternate A.D.A.*, Milford

DELAWARE STATE BOARD OF HEALTH

I J MacCollum, M. D., *President*, Wyoming; Mrs. A. Lonise Cochran, *Secretary*, Middletown; Mrs. Edith R. Kendall, Wilmington; C. F. Moore, D D S., Seaford; C M Moyer, M. D., Laurel. J D. Niles, M D., Middletown; H. N. Stayton, Jr. M D., Wilmington; Mrs. Barbara N. Voss, Wilmington; F. I. Hadson, M. D., *Executive Secretary*, Dover

BOARD OF MEDICAL EXAMINERS

J. S. McDaniel, *President-Secretary*; H. V. P. Wilson, *Assistant Secretary* W. E Bird, J E Marvil G A. Beatty

SUSSEX COUNTY MEDICAL SOCIETY

Meets Second Thursday

O. A. James, *President*, Milford
J. L. Fox, *Vice-President*, Seaford
T. J. Tobin, *Secretary-Treasurer*, Milton

Councilors: J. W. Lynch, Seaford; A. C. Smoot, Georgetown.

Delegates: Bruce Barnes, Seaford; D. L. Bice, Seaford; C. M. Moyer, Laurel; G. M. Van Valkenburgh, Georgetown.

Alternates: W. G. Hume, Selbyville; R. L. Klingel, Rehoboth; A. C. Smoot, Georgetown; E. L. Stambaugh, Lewes.

DELAWARE ACADEMY OF MEDICINE

Open 10 A.M. to 5 P.M.

B. M. Allen, M.D., *President*.
W. M. Pierson, M.D. *First Vice-President*.
R. R. Wier, D.D.S., *Second Vice-President*.
A. M. Gehret, M.D., *Secretary*.
I. M. Flinn, M.D., *Treasurer*.
E. C. Syrovatka, J. D., *Librarian*

DELAWARE PHARMACEUTICAL SOCIETY

J. Wallace Watson, *President*, Wilmington
Landis Wilson, *First Vice-President* Georgetown
Norman Chamberlain, *Second Vice-President*, Harrington.
Grover Ashton, *Third Vice-President* Milford
Harry C. Zeisig, *Secretary*, Milford
Albert Dougherty, *Treasurer*, Wilmington

DELAWARE STATE MEDICAL JOURNAL

Issued Monthly Under the Supervision of the Publication Committee
Owned and Published by the Medical Society of Delaware

VOLUME 23
NUMBER 12

DECEMBER, 1951

Per Year, $4.00
Per Copy 50c

ACUTE TOXEMIAS OF PREGNANCY

K. Vileisis, M. D.*
Milford, Del.

The classification of toxemias still is not fully agreed upon. Different authors have different propositions. The following classifications are recommended by Eastman, Titus, McCormic, Greenhill and are most widely used:

1. Acute toxemias
    a. pre-eclampsia
    b. eclampsia
2. Chronic hypertensive vascular disease (essential hypertension)
    a. chronic hypertensive vascular disease with superimposed acute toxemia
    b. chronic hypertensive vascular disease without superimposed acute toxemia

The etiology of acute toxemias still can be expressed as "the disease of theories".

One of the latest theories of etiology is associated with female endocrine disturbances. There was found to be an excessive increase of chorionic gonotropic hormone in the blood and urine of pregnant patients with toxemias, also a deficiency of progesterone and extrogen before and during the toxemia. But in acute toxemia any real value of endocrine therapy still remains to be ascertained. Trials with alpha estradial and progesterone, progesterone and stilbesterol have failed to affect the course of toxemia. In some clinics where any improvement has been found, it was just slight and temporary.

There are definite evidences that deficiency in essential proteins, minerals, vitamins, and climatic conditions play a part in the etiology of toxemia.

It is generally felt that the mechanism of toxemias rests on generalized injury of the capillaries and constriction of arterioles, notably present in kidney, liver, brain, and retina, also present frequently in the lungs, and always in the placenta.

During the period from 1948 through November 1, 1951 there were admitted to the Maternity Ward of the Milford Memorial Hospital 3223 patients. Of these, 36 were diagnosed as having toxemia; of these 22 had acute toxemia. There were 20 white patients and 2 colored patients. The total percentage of acute toxemia was about .66% of all admissions to the Maternity Ward.

The criteria for diagnosis of acute toxemia was made by the presence of proteinuria, sudden increase of blood pressure to 140/90 or over and edema with sudden increase of weight in the pre-eclamptics. The addition of headaches and convulsions to these established the diagnosis of eclampsia.

Of the 22 cases of acute toxemia, 9 had pre-eclampsia and 13 cases were with eclampsia. Of these, 2 were postpartum eclampsia.

The youngest patient was a 16-year-old primapara, and the oldest was a 43-year-old multipara. The other age groups consisted of the following:

16 to 20 years — 5 patients
20 to 30 " — 11 "
30 to 40 " — 3 "
40 and 43 " — 2 "

The majority of patients with acute toxemia were admitted during the summer months—9, 6 during the autumn, 5 in the spring, and the lowest admitted during the winter months—2 patients. Of our patients 17 were primagravida and 5 were multigravida of which 1 was expecting her 16th baby. All except 4 had prenatal care by their family physicians.

Thirteen patients were treated conservatively, the treatment consisting of restricted salt, high protein diets, and in some instances high carbohydrate diet was used. Most of our patients had morphine in doses from 1/6 grain to 1/2 grain or demerol, 100-159 mgm. Demerol has the preference since it is less

---

*Resident Physician, Milford Memorial Hospital.

LIBRARY OF THE

depressive to the mother and fetus and it also has some influence in lowering the blood pressure. To control and prevent convulsions barbiturates such as sodium pentothal, phenobarbital, seconal, nembutal, also paraldehyde and chloral hydrate by rectum. All patients were given magnesium sulfate 10% from 10cc to 40cc intravenously or 50% from 2cc to 10cc intramuscularly. The majority of patients having low urinary output had intravenous injections of a solution of 5%-20% glucose in water. Five patients had lumbar punctures. Three showed immediate improvement and 2 patients showed no change in condition as a result of the puncture. Some of our patients had whole blood transfusions or plasma.

For induction of labor we used pitocin, quinine, enemas, rupturing membranes and, in 1 case manual dilatation of the cervix was performed. The most severe case was in the group of conservatively treated cases in a 20 year old primagravida who was attended regularly by her family physician and her pregnancy was progressing normally. During her last visit, two weeks prior to her estimated confinement, her blood pressure and urinalysis were normal and the relative gain in weight was insignificant. A week prior to her estimated date the patient moved to Milford to live with her mother. At that time she noted swelling in her legs and face, with frequent headaches. The day prior to admission she noticed that her urinary output was greatly diminished and headache was constant. The following morning she developed convulsions. Before she was hospitalized she had three severe attacks, each of a duration of 1-3 minutes. There was no history of hypertensive, renal, or cardiac disease. Three years ago she had an operation on the spine, probably for herniated paravertebral disc. Family history revealed no serious diseases. Upon admission the patient was unconscious, her blood pressure was 180/118, pulse 90, temperature 99.2° F. Pupils were equal, slightly dilated, and reacted to L. and A. Fundi were negative. The mouth was bloody, from biting her tongue. Heart and lungs showed nothing significant by P. and A. The uterus was about 3-4 fingers below the xiphoid process. The fetal heart was right from the umbilicus, about 130 per minute, of good quality. The skin was pale, mucous membranes cyanotic. There was moderate neck rigidity, Kernig's sign highly positive, patellar reflexes slightly exaggerated. Rectal examination showed the cervix to be closed, thick, head down in the pelvis.

In the following six hours the patient had eight attacks of convulsions. Some were of more than 15 minutes duration. Her color was poor and respirations very shallow. The patient was put on the critical list. The fetal heart was not changed.

During this period the patient was getting nasal oxygen, intravenous injections of 20 cc of 10% magnesium sulfate every 2 hours, morphine 1/4 gr. with atropine 1/150 gr. q 3 h. Sodium pentothal was used to control convulsions, also she was getting chloral hydrate by rectum and 500 cc of plasma by intravenous injection. About 10 hours after admission her uterine contractions started but the patient's condition was more serious. Her blood pressure dropped and her temperature rose to 106°F. Once her breathing stopped and started again after artificial respiration. Lumbar puncture was done to reduce intracranial pressure. Due to the high pressure, about 20 cc of clear spinal fluid was withdrawn. After the puncture her breathing improved but her condition was still critical. A surgeon was called to stay with the patient, in case she should expire, to perform postmortem laparotomy and save the baby while its heart was still strong. During this critical condition rectal examination proved that the cervix was fully dilated. The membranes were ruptured artificially and, after a left posterior episiotomy, spontaneous delivery followed. The baby cried immediately and was in good general condition.

Soon after delivery, the patient's general condition began to gradually improve. In 24 hours she was able to recognize her family and her urinary output was satisfactory.

Fifteen days after admission the patient was discharged from the hospital. Her blood pressure was 128/90, urine still had three plus albumin, innumerable WBCs, 5-10 RBCs and hyaline casts. Edema and headache had disappeared.

Cesarean section was performed upon 9 patients; of these 5 had eclampsia and 4 had preeclampsia. There was no special selection of patients or scientific indications for surgical treatment. One hundred forty-four cesarean sections were performed during this period, which gives an average of 6.2% for acute toxemias.

There was one death among these surgical patients. This was a 32-year-old primagravida admitted in shock, skin cold, pale and cyanotic, yet the blood pressure was 170/140. This patient had a history of hypertension, albuminuria, and edema for several weeks, with sudden rise over the two or three days before admission. In four hours after admission her blood pressure rose to 300/3. After 500 cc of blood had been withdrawn the blood pressure fell to 175/120, pulse slightly improved. Fetal heart was very weak and the mother appeared moribund. It was decided to do a section with the possibility of saving the baby. The patient was still breathing at the end of the operation, which was done without anesthesia. Her color was better at the end of surgery and blood pressure was down to 164/110, pulse 156. Pulse was improving when she was transferred to the oxygen tent in her room but within 15 minutes respirations ceased completely and stimulants were of no avail. Six hours after admission she was pronounced dead. The baby was stillborn.

Of the 22 cases of acute toxemias only 1 patient died. There were no deaths in the conservatively treated patients. This makes a total mortality rate of 4.8%. We had 4, or 18%, stillborn babies, and 1 expired 6 hours after delivery. There were 2, or 15.3%, stillborn in the group of conservatively treated patients, and 2, or 22%, in the group of surgically treated patients.

There was no opportunity to observe the patients after discharge from the hospital. All of our patients were discharged improved, but 2 patients had higher blood pressure at the time of discharge than on admission. Eleven patients were discharged with blood pressure of 140/90 or over and 9 patients were discharged with normal blood pressure.

REFERENCES

1. Eastman, N. Y.: Williams Obstetrics New York: Appleton-Century-Crofts, Inc., 1950.
2. Greenhill, J. P. Yearbook of Obstetrics and Gynecology Chicago: Yearbook Publishers, Inc., 1948.
3. Greenhill, J. P.: Yearbook of Obstetrics and Gynecology Chicago: Yearbook Publishers, Inc., 1949-50.
4. Page, I. H. and Corcoran, A. C.: Arterial Hypertension Chicago: Yearbook Publishers, Inc., 1946.
5. Scadran, E. W. and Roth, L.: Management of the Specific Hypertensive Disease of Pregnancy, Med. Clin. No. Amer., May, 1949.

REACTIVE DEPRESSION

A Case Report

Hal W. Geyer, M.D.*
Dover, Del.

On September 19, 1951 in the mid-morning the family physician of a patient whom he had attended for many years received a call to come in all haste. The physician immediately responded to the call and found the patient waiting at the door of her home. She was highly excited and babbling, at times incoherently, about the terrible things that were happening which some fortune teller had predicted to her some 18-20 years previous. The family physician promptly referred her for psychiatric treatment.

The patient, accompanied by her husband, appeared for examination a few hours later. Her hair and apparel were disheveled, she appeared tired, worn, and very tense. Her expression was one of worry and fear. She was agitated to the point where she could not be seated during the examination. She was inaccessible until her husband retired to the waiting room, after which she ventilated freely. In great detail she explained how a fortune teller predicted, when she was twelve years of age, she would, many years later, meet a man who would alter her whole life. This man would be a shoe salesman, to whom she would be attracted, and further, she would not be able to resist making overtures which would culminate into a romance. She stated she had seen the man selling shoes in a local bootery a few days prior to this examination. Upon her return home, she stated, she fought against the impulse to telephone this man but could not resist the dictates of the fortune teller, and called and contacted the individual. Only a few words were spoken when she quickly replaced the receiver and felt a terrific state of panic over the incident. Following this, she would not venture from her home as she was afraid the man's wife would identify her and publish the above mentioned incident in the newspaper. She stated that all this and many other things the fortune teller predicted "were all coming true". At times during the examination she would describe and elaborate on the auditory hallucinations by stating, "She (the fortune teller) just told me I didn't need to worry about this or that," or "this is going to turn out this way or that way".

---

*Associate in Psychiatry, Kent General Hospital.

When questioned directly about the hallucinations she would laugh inappropriately and say, "What is wrong with my mind doctor, why do I think this way?" "Why is my daughter going to die when she is seventeen years old?" "I have a wonderful husband, why should I make him suffer, and why is something going to happen to him?"

Her husband was interviewed and he stated that within the past eleven months there had been three deaths and severe illnesses in the family. The deaths involved the patient's mother, brother, and half-sister. He noticed that after each death the patient became more and lastingly emotionally upset and fearful of the future. This reactive pattern apparently became more progressively pronounced until September 15 when a drastic change in the patient occurred. She became agitated, would not eat or sleep, endeavored to keep her three children close to her, cried considerably, and neglected herself and her housework.

Physical examination revealed a slight, disheveled, unkempt, 31 year old white female, showing marked loss of weight. Tongue heavily coated and dehydrated. EKG and chest plate showed no pathology. Kahn & Wassermann negative. Laboratory findings were within the normal range except for a slight decrease in hemoglobin and red cell count. Patient was hospitalized in a ward bed. Intravenous feedings of trinadex with thiamine chloride, berocca-C incorporated was administered daily throughout her stay in the hospital. Sedation was obtained at night with carbrital capsule, full strength, with one repeat if necessary during the night, which gave the patient a fairly quiet and restful night.

Patient was examined the next morning and she appeared quite refreshed physically. She was more accessible and ventilated more freely than the day before. Her hallucinatory and delusional material was grossly pronounced and she became more agitated and disturbed as the examination proceeded. She asked if the morning papers carried headlines or an article relative to the aforementioned episode.

Patient was administered E.C.T. She became restless that night and requested a private room. She only stayed in the private room for about twenty minutes when she requested to be returned to her bed in the ward. She stated she saw an aunt of hers, who had been dead for six years, walking around the room. She was returned to the ward, was sedated, and passed a fairly quiet night.

E.C.T. was administered each day and on September 24 patient was discharged from the hospital under the supervision of her sister, who in the interim had been managing the home.

Patient was interviewed on September 26, showed marked improvement but examination revealed a marked U.R.I. with a gastro-enteritis which was quite prevalent at that time.

She was immediately referred back to her family physician for treatment and the family was instructed to telephone this physician when the condition had cleared. On September 30 the patient personally telephoned stating the condition had cleared and her family physician referred her back for psychiatric treatment. She stated she felt fine, was eating and sleeping well, and had gained a slight amount of weight. An appointment was made for October 3.

Patient appeared for the appointment accompanied by her husband. Her apparel was meticulous and immaculate, nails groomed, and a coiffure which had recently been permanently waved. Examination revealed no depressive element but some delusional material. E.C.T. was administered. Psychotherapy was administered on the average of once to twice a week. On October 30 examination showed some residual delusional material. E.C.T. was administered on that date. Psychotherapy is being continued and patient is maintaining well. She handles the household duties and has been doing so without the assistance of her sister the past two weeks.

Summary

This 31-year-old housewife manifested a more or less classical reactive depression. Although the depressive element is the primary factor in this type of mental disorder, its removal with E.C.T. appears to invariably precede the delusional or hallucinatory elements.

A number of favorable factors were embraced in this case, among those most important are: a wholesome environmental situation; an understanding, patient, and cooperative husband; three understanding children, ranging from 8 to 13 years of age; and the help and support of the patient's sister.

Psychiatric physician and family physician relationship is maintained by immediate referral back for medical treatment needed, thereby maintaining the continuity of established treatment of the family of many years standing.

Up to the date of this writing patient has received seven E.C.T. treatments. Psychotherapy is continuing. Sedymal is administered periodically. Patient is studied closely throughout her psychotherapeutic program for any signs of regression.

ARTIFICIAL TRICEPS ACTION

George J. Boines, M.D.*
Wilmington, Del.

The mechanical device** consists of an arm and forearm brace with a free elbow joint with elastic spring adjusted to hold the forearm in extension. Patient flexes forearm at will with her own strength and when she relaxes the flexors, the elastic acts on the elbow joint to extend the forearm.

Through the use of this device this patient has been able to play basketball and to reach over head in a satisfactory manner to take hold of objects from a shelf, to fix her hair, and the like.

The tension of the elastic spring can be increased or diminished by moving the holding screw on the joint circular plate. This may also be accomplished by regulating the number of turns of the elastic spring used between the two holding posts.

The elastic spring is strong enough to produce powerful extension, is inexpensive, and easily adjusted by the patient. It has the disadvantage of becoming weak after some use. It is hoped that a suitable spring may be developed which may be inclosed and be more durable.

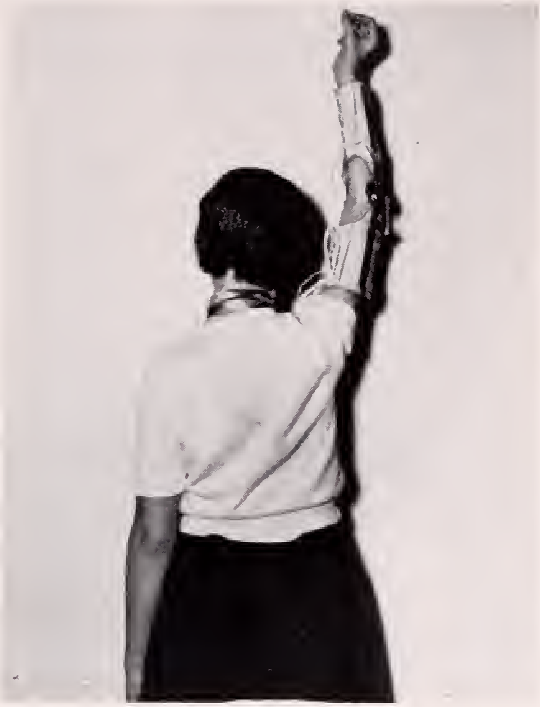


FIG. I

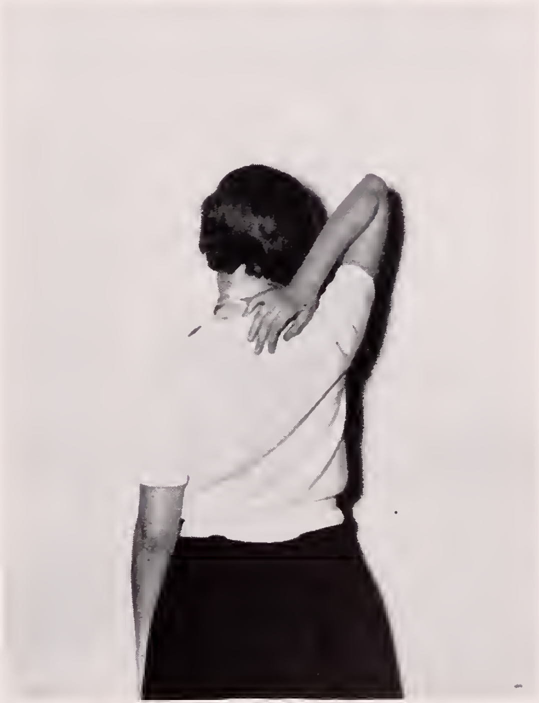


FIG. II

The patient has good shoulder muscles and good elbow flexion. Hand is also good as far as strength is concerned, although there is considerable muscle atrophy present. The only major disability is the inability to extend the forearm overhead because of the complete paralysis of the triceps. There is full range of motion of all joints.

---

*Attending chief of Communicable Diseases, St. Francis and Wilmington General Hospitals.

**The brace was developed through the cooperation of the GENERAL LIMB AND BRACE COMPANY, 1916 Market Street, Wilmington Delaware.

MEDICAL SOCIETY OF DELAWARE PROCEEDINGS: 1951

The scientific meetings of the 162nd Annual Session, 1951, proceeded exactly according to the program as printed in The Journal for September, 1951.

At the morning session on October 10, 1951, the election of President-elect took place as follows:

President Wagner: We shall now proceed with the election of the President-elect for the year 1952. Nominations are now in order for the office of President-elect for 1952, and, as you know, he must be from New Castle County.

The Chair recognizes Dr. Flinn.

Dr. L. B. Flinn (Wilmington): I would like to place in nomination one who has always patiently served this Society, has always had the respect of the Society, and, at the same time, one who has always had great concern for and has always worked in the interest of the public's welfare.

I nominate for the office of President-elect, Dr. Victor D. Washburn.

President Wagner: Are there any other nominations?

Dr. Tarumianz: I move the nominations be closed, and the Secretary cast the ballot. The motion was seconded and carried.

President Wagner: I now introduce to you Dr. Washburn, President-elect, 1952.

Dr. Victor D. Washburn (Wilmington): Dr. Wagner, Dr. Stambaugh, Members of the Society: I thank you from the bottom of my heart for this expression of your good will and your respect.

I would like to take advantage of this opportunity to say to you, perhaps somewhat moved by the sentiments expressed by Dr. Wagner in his Address—it is increasingly clear to my mind that this office—I believe it comes into effect in 1953—does not only connotate your good will and your respect, but your confidence in my ability to assume and discharge the responsibilities which are implicit in the office.

In that connection, I would like to say that I could not possibly discharge the obligations with credit and with success without not only the knowledge that your good will and your help is always available, but that it, in addition to being available, will actually be placed at my disposal in the common good.

In the last two or three years, I have been serving as you know as the health officer of the city of Wilmington, in the field for which I was not trained or qualified, and I can testify here, Mr. President and Members of the Society, that on no occasion when there was need for professional advice and assistance was it not forthcoming from many different members of the profession, always instantly on request, and it is with that knowledge and with humble understanding of my dependence upon you members of the Society, that I can possibly accept and render my proper and successful administration.

I thank you again from the bottom of my heart for this expression of your good will.

The afternoon session on October 10, 1951, concluded as follows:

President Wagner: I hope I am not wrong in saying, as we arrive at this point, in conclusion, that we have had a most successful convention. Everyone knows that a successful convention doesn't just happen—a lot of spade work must be done, and done almost a year in advance. I am indebted to all of the officers of our Society, and wish to mention by name, Dr. Ervin L. Stambaugh, Dr. Benjamin B. Burton, Dr. Joseph M. Messick, Dr. Andrew M. Gehret. And I want to say I am especially indebted to our Executive Secretary, Dr. W. Edwin Bird, upon whom I leaned very heavily for support. He never failed me in giving proper advice and I wish to take this opportunity to thank him most sincerely for the wonderful cooperation which he has given to me through this past year. It has been a pleasure to work with him, and whatever success this convention has had, it is due in very, very large measure to his efforts.

I also wish to thank the New Castle County Medical Society, the host Society, whose guests we were at luncheon today. I am sure we all enjoyed that very much, and are very much indebted to the Society.

Secondly, the Women's Auxiliary was of tremendous assistance. They had a very delightful luncheon out at the Du Pont Country Club. As I said at that time, I have always been very sympathetic towards the work of the Women's Auxiliary. We owe very, very much to them, and a great many of us may not be aware of their efforts, but they are unfailing and contribute much to the welfare of our Society.

Third, the Committee on Arrangements, Dr. J. W. Barnhart and his Committee. Dr. Barnhart is to be especially complimented as Chairman of that Committee for what has been done. I know he has had a lot of headaches, but I hope he feels as I do that this has been a most successful convention.

I might say that with all the trials and tribulations we have had, if we can simply feel the convention has been a success, we are very happy and satisfied.

Fourth, the Exhibitors: The Convention could not be held without the exhibitors, with all that they mean to us, not only financially, but, I know that you all feel as I do, that they are all very cooperative, they have tried to help us in every way. The medical profession cannot get along long without the pharmaceutical assistance that we receive, and of course, there must be instruments and books and all of those things available for us to try to progress.

We are very, very much indebted to the exhibitors for coming here and for their financial support, of course, which they made to us.

Fifth: The Hotel Du Pont. I can not say how much we are indebted to the Hotel Du Pont for all the services which they have given us. In the background we have conferred with them and they have given us the very best of their help, efforts, and support, and I am sure all of you will say that we have had delicious dinners here and the food has been wonderful. And I would even like personally to send a letter of thanks to the Hotel Du Pont for what they have done to make this convention a success.

Sixth: To the Police Department which has cooperated in the matter of parking. They have been most kind and cooperative, and we owe them a debt of gratitude.

Seventh, the Press: We have had wonderful support from the press. They have published everything which has been asked of them. They have done it promptly and willingly, and I think that what you are seeing in the press will verify what I have said, that they have given us wholehearted support.

And I again wanted to say, I have had a very, very pleasant year. While my term of office doesn't expire until the first of the year, 1952, yet there probably will not be much that will have to be done between now and that time, and my work at the conclusion of this meeting is practically finished, and I again wish to express my gratitude to everyone who has been of such great help. Even by your attendance, it makes one very happy to know that even on the first day, our attendance exceeded the whole two days of the convention two years ago. I am not sure what the attendance was today—I haven't had a chance to talk to Dr. Bird—but I feel that we have had a good attendance. When one puts forth a lot of effort he likes to have good attendance to make him feel that that effort has been well spent.

Again I wish to thank all of you and I hope that you will all have a very successful convention and support Dr. Stambaugh to the best of your ability throughout the coming year.

Thank you, very much.

Now, is there anything further?

Dr. Bird: Except for the figures—for those of you who are interested in figures:

The number of doctors registered is 164 out of a total membership of 327—exactly 50 per cent. It is my understanding that the average throughout the various states runs around 50 per cent. So we feel gratified that this little Society did reach an attendance of 50 per cent, which is exactly the attendance we had two years ago. The total registration was 382, including guests and visitors, residents and internes, exhibitors, and Women's Auxiliary. But the thing we are most concerned about is the turnout of doctors—164 out of 327—exactly 50 per cent.

I note with great distress, however, that a couple of our exhibitors feel that they do not care to come back. Maybe this is not the time or the place to make such remarks, but I don't want to let this opportunity pass.

The doctors at next year's and future conventions, will please stop at every one of these booths, and show some interest and ask some questions—take literature, take samples—and show that you appreciate by your attitude and interest in their welfare that you appreciate their interest in our welfare.

Thank you.

President Wagner: Thank you, very much, Dr. Bird.

I hereby declare the 162nd Annual Session of the Medical Society of Delaware adjourned.

Thank you.

Thereupon, at 5:50 p. m., October 10, 1951, the 162nd Annual Session of the Medical Society of Delaware adjourned, sine-die.

TRANSACTIONS: THE COUNCIL
OCTOBER 8, 1951

The meeting of the Council of the Medical Society of Delaware convened at 8:15 p. m. Monday evening, October 8th, 1951, in the Colonial Room of the Hotel Du Pont, Wilmington, President Charles E. Wagner, presiding.

President Wagner: The meeting of the Council of the Medical Society of Delaware will please come to order.

Dr. Gehret will please call the Roll.

The roll call of Council members present follows: Charles E. Wagner, Joseph M. Messick, Andrew M. Gehret, L. C. McGee, J. C. Pierson, H. T. McGuire, C. J. Prickett, William Marshall.

Secretary Gehret: Mr. President, there is a quorum present.

President Wagner: There is a quorum present. We will proceed with the business of the meeting.

Dr. Bird: Mr. President, Members of Council: In view of the lateness of the hour and the fact that the reports to be presented to the House of Delegates and which would ordinarily be reviewed here in a preliminary manner are routine and perfunctory, I think it wise perhaps to spend our time only on the Report of the Treasurer, to bring your finances up to date, the Report of the Budget Committee, projecting our finances for the next year, and discussion of the four proposed changes to our By-Laws. If we discuss those and dispose of them here, with recommendations to the House, I think we will have accomplished all we need to do in this meeting.

President Wagner: If there be no objection, that is the course that will be followed. What is first, then?

Dr. Bird: Report of the Treasurer.

President Wagner: Report of the Treasurer—Dr. Joseph Messick.

Dr. Joseph M. Messick: I will read this report of the Treasurer, just giving headings.

This report covers the period January 3, 1951, to October 3, 1951. I might say that January 3rd is selected instead of January 1st because the 3rd is the date the Auditor closed the books.

Balance in checking account January January 3, 1951	$ 7,910.66
Total receipts	17,723.85
Total amount of monies available	$25,634.51
Disbursements during first nine months	14,112.06
Balance October 3, 1951	11,522.45
Assets of the Society, Oct. 3, 1951	
Balance in checking account Sept. 30th, 1951	11,522.45
3 $1000.00 Series F War Bonds (Sept. 1951)	2,622.00
7 Shares Farmers Bank of Delaware	2,800.00
Wilmington Savings Fund Society Acct. 93006	4,063.57
Total Assets, Sept. 30, 1951	$21,008.02

President Wagner: You have heard the report of the Treasurer. What action will be taken upon this report.

Dr. Prickett: I move it be accepted.

The motion was seconded, put to a vote and carried.

The next item of business, then, is the report of the Budget Committee. Dr. Messick is chairman of the Budget Committee.

Dr. Messick read the report of the Committee on Budget for 1952. On motion to accept the report, and seconded, the motion was put to a vote and carried.

President Wagner: The next item of business is the proposed amendments to the By-Laws. Secretary Gehret will read the proposed amendments.

MEDICAL SOCIETY OF DELAWARE
BY-LAWS
PROPOSED AMENDMENTS

The following Amendments are proposed to the booklet of By-Laws of the Medical Society of Delaware, and are published in the July issue of the Journal, in order to give the members the required two months' notice before action is taken in October.

ITEM I

Page 10, Line 6 and Line 16, Article 3, Section 7—Dues and Assessments changes "April 1 to April 30".

ITEM II

Page 18, Line 19, Section 9,—Transfers. Change "one year" to "six months". Section 10, Bottom

Line—Transfer Cards. Change "Twelve months" to "Six months".

ITEM III

Page 10, New Amendment to Article 3, Section 6—Dues and Assessments. Active members of this Society shall be excused from payment of annual dues and special assessments of this Society as long as they are on active duty with the Armed Forces of the United States. Said members shall pay the dues for the year in which they are inducted into service, but shall not pay the dues for the year in which they are mustered out.

ITEM IV

Page 10, New Amendment to Article 3, Section 6—Dues and Assessments. Active members of this Society who retire from practice before the age of seventy, and who derive no part of their income from the clinical practice of medicine shall be excused from the payment of annual dues or special assessments of this Society, provided they are similarly excused from the payment of dues and assessments of their component county society, and provided further that they shall file with the Secretary of this Society, on a form to be provided by said Secretary, an affidavit to the affect.

President Wagner: Gentlemen, you have heard the reading of these proposed amendments. Suppose we take action on them item by item.

Dr. Bird: If you don't mind, I will explain a word or two about each. As to Item I: Our By-Laws already state you will not be in arrears until the fourth month, January to April 30th, or May 1st. Through an error the book said "April 1st". That should be changed to April 30th, or May 1st. Let's stick to April 30th.

Item II, on Transfers. Change "one year" to "six months." That is in line with the rulings in the By-Laws of the A. M. A., as changed.

Dr. Cline: The purpose of that change was to reduce the period from one year to six months because certain people transferred from one state to another and didn't take out membership in the new state of residence and did things while not members of that society of which the society disapproved.

Dr. Bird: Then we are in good order in making our By-Laws conform by making it "six months".

Dr. Cline: Correct.

Dr. Bird: Item III is a new proposition. Many societies are already excusing from dues those members that are transferring to military service; not career men, but army, navy, the air force, and so on, in military service. The proposal is that they pay the dues for the year in which they are called into service and are then dues-free until mustered out and do not pay for the year in which they are mustered out—rather than checking on the exact date, about which there could be conflict, perhaps. So it is simpler to state they pay for the year in which they go in to the service and not the year they come out. A similar principle to that of the hospitals when they say you pay for the day of admission; not for the day of discharge. It is the same principle. I think there could be little disagreement with that. The only idea to consider is, does this body wish to take members in the military services dues-free? I would so recommend because most states are so doing.

Now, the next item, Item IV. The A. M. A. excuses from dues those who reach age 70 or who have been 30 years a member in the Society. They also excuse members who have retired—a bona fide retirement, from practice. Well, to make that a worth-while amendment I have a form here, I think from Kentucky or Tennessee, to use, if this amendment is passed. It is the type of wording of an affidavit that should be required of a man which says "I am now retired"—in which case, and so on—but it doesn't state if they received dues for any given number of years. If you care to, you can amend it by saying twenty or fifteen years a member of this Society, and then retires. You may amend it as you like, but the proposition is that active members of this Society who retire from practice before the age of seventy would be dues-free in our county and state societies and in the A. M. A. I think you all will agree with the justice of that proposition.

President Wagner: Do you wish this report to be voted upon item by item?

Dr. Bird: I would so suggest, Mr. President.

President Wagner: Item I: That is the changing April 1 to April 30th. What action shall be taken upon this portion of the report?

Motion to accept the change and seconded.

President Wagner: Is there any discussion—are there any comments?

Dr. L. C. McGee: May I ask why the 30th of April was selected instead of May 1st?

Dr. Bird: Merely because it is easier to print a "1" over the "30". You can make it May 1st, if you like. It is a mere technical matter.

The motion to accept was then put to a vote and carried.

President Wagner: Item II is next, on Transfers.

Dr. McGee: I move we recommend this adoption to the House of Delegates.

The motion was seconded, put to a vote and carried.

President Wagner: Item III, in regard to military members, and so on. What action shall be taken on this portion of the report?

Dr. Pierson: I move the adoption.

Motion seconded, put to a vote and carried.

President Wagner: Item IV, on retirement, as read by Dr. Bird. What action shall be taken on this portion of the report?

Dr. Messick: Is there any reason why that should not say "statement to the effect", rather than "affidavit"?

Dr. Bird: No special reason except an affidavit is a sworn statement that a man is actually retired and not receiving revenue from a patient or two here or there. I mean, when this Society excuses a man from payment of dues and special assessments it should be an honest to goodness, bona-fide retirement, and they should submit a statement, perhaps sworn to, that the retirement is a bona-fide retirement.

Dr. J. C. Pierson: May I raise a question? Does "retirement" imply retirement only from the practice of clinical medicine, or, for example, a person who, after two or three or five years in clinical practice might decide to engage in some other pursuit which was lucrative enough for him to give up medicine and he would voluntarily retire from medicine and derive no income from the practice of medicine—would he then be eligible for this retirement?

Dr. Bird: May I read the first part again? (Reads).

Dr. McGee: It depends upon your interpretation of the phrase "clinical practice of medicine." I think there may be a loophole there that you might look into.

Dr. Bird: We had in mind that the clinical practice of medicine is the seeing and taking care of patients.

Dr. McGee: In the Medical Practice Act—even there you are practicing medicine. It is very broad.

Dr. Bird: That could be debated—but that was not in mind when it was drafted. The idea was the practice of clinical medicine is seeing and treatment of patients. You could use your medical knowledge in other fields.

Dr. McGee: Then why should he be exempt, if competent to pay active membership dues?

Dr. Bird: That's a good question. The whole thing is up for discussion. We hope we get ample discussion. It may be if a man has switched from clinical practice to another use of his medical knowledge that gives him a good income, that man perhaps should not be excused from payment of dues for membership in this Society. It is for this Council to recommend to the House of Delegates what they think should be done. I bring it up only because the A. M. A. excuses from payment of dues a class that we do not now excuse from the payment of dues—retired members. We have a couple of classes dues-free now, but . . .

Dr. J. C. Pierson: I am confused as to whether to confer an honorary membership based on prior service and interest in the practice of medicine . . .

Dr. Bird: He couldn't acquire honorary membership under the age of 70. "Retired from clinical practice," this says. I agree with you though, because after this was printed I had my attention called by two or three of the members that the thing was not as complete as it perhaps should be. I am glad you are bringing it up. I think there should be some qualification.

Dr. McGee: Do we have the A. M. A. wording of it?

Dr. Bird: I don't have it here.

Dr. Cline: I am not sure of the wording of it.

Dr. McGee: Have you checked the wording of this as against the A. M. A. wording?

Dr. Bird: Only to the effect the A. M. A. excuses from payment of dues members in retirement.

Dr. Cline: The principle of the A. M. A. there is to permit the state and county society to judge what members should be excused, and they are excused only in event they are likewise excused from the county and state society dues. They may be required to pay the one and not the other —in some places they can, for example, pay the county and not the state. It has to be determined by the local organization, because you are the people who know what the men in Delaware are doing, and it is the idea that it should be a complete retirement.

Dr. J. C. Pierson: I think we know the intent of this recommendation.

Dr. McGee: Why not say retirement from the practice of medicine, and leave out the trick word "clinical"?

Dr. Marshall: They have to pay their fees for The Journal, and probably that would have to be included in some resolution that we put in for that.

Dr. Bird: You mean, for what purpose?

Dr. Marshall: That they would receive The Journal, free.

Dr. Bird: The Delaware or the National Journal?

Dr. Marshall: I am referring to the A. M. A. But the Delaware Journal, for our own purposes.

Dr. Bird: Under this, as drawn, if a man has been an active member of the Delaware Society and retires, he would still get the Delaware Journal, but under no condition does he get the Journal of the A. M. A. as I understand it, except as an active member in good standing.

Dr. Marshall: I think it is controversial, anyhow; and I think there is no question about the first three items that you wanted to get across. But this last one is more or less controversial.

Mr. President, I think it would be a good plan to refer that to the House of Delegates and let them thrash that out.

Dr. Bird: Just as you wish.

Dr. Marshall: I will make that motion.

President Wagner: Would it meet your approval to appoint a committee and also confer with Dr. Bird about this item, so that it can be brought up to the House of Delegates?

Dr. J. C. Pierson: I would like to hear the reading of the whole thing again.

The Executive Secretary, Dr. Bird, then read the entire proposed amendment, Item IV.

Dr. McGee: I can't conceive of a man having to make such an affidavit.

President Wagner: This, then, gentlemen, has all been in the nature of a discussion on this item. Will someone make a motion that the item be accepted?

Dr. McGee: I move it be approved and referred to the House of Delegates.

The motion was seconded and carried.

Dr. Bird: That is all I have, Mr. President.

President Wagner: I have here a letter I received from Miss Eleanor J. Bader relative to appointing a committee to the Delaware Curative Workship, Inc. for the years 1951-'52 and '53. This letter is in reply to the letter sent me, regarding the appointment of such a committee. I, of course, in my authority as President, appointed this committee, and wish to have your approval of it, as follows:

Irvine M. Flinn, Jr., Chairman; Ward W. Briggs, Charles F. Richards, Philip Gordy, John C. Pierson, Floyd I. Hudson, Ervin L. Stambaugh, John B. Baker, J. Leland Fox.

Will somebody make a motion that the appointment of this committee be approved?

Dr. Prickett: I so move.

The motion was seconded, put to a vote and carried.

Dr. Bird: That is all I have for the Council, sir.

President Wagner: Is there anything else to come before the meeting of Council?

If not, a motion for adjournment is in order.

Dr. Marshall: I move we adjourn.

Motion for adjournment was seconded, put to a vote and carried. Council thereupon adjourned at 8:45 p. m.

TRANSACTIONS: HOUSE OF DELEGATES

October 8, 1951

The meeting of the House of Delegates convened at 8:50 p. m. in the Colonial Room of the Hotel Du Pont, Wilmington, Monday, October 8th, 1951, Dr. Charles E. Wagner, President of the Medical Society of Delaware, presiding.

President Wagner: Shall we proceed with the meeting of the House of Delegates, now, gentlemen? The meeting of the House of Delegates will please come to order.

We will have the Roll Call by Dr. Gehret.

The Roll Call of members present follows:

Charles E. Wagner, President; Ervin L. Stambaugh, Vice-President; Joseph M. Messick, Treasurer; W. Edwin Bird, Executive Secretary; Andrew M. Gehret, Secretary.

L. C. McGee, E. M. Bohan, Ira Burns, J. C. Pierson, C. J. Prickett, William Marshall, Jr., A. D. King, E. G. Laird, W. O. LaMotte, Sr., G. E. Maroney, E. M. Mayerberg, W. M. Pierson, H. H. Stroud, M. A. Tarumianz, N. L. Cannon, I. L. Chipman, C. L. Munson, M. B. Pennington, G. W. Vaughn, V. D. Washburn, J. R. Beck, R. D. Sanders, J. M. Barnhart, J. S. McDaniel.

LIBRARY OF THE
COLLEGE OF PHYSICIANS

President Wagner: There is a quorum present. We will proceed with the meeting.

The first order of business is the reading of the minutes of the last session.

Dr. Bird: They were printed in the December issue of the Delaware State Medical Journal, and as a rule some member has been kind enough to move that having been printed, their reading at this time will be dispensed with.

Dr. Tarumianz: I will so move, Mr. President.

The motion was seconded, put to a vote and carried.

President Wagner: We will proceed, then, with the Reports of Officers. The report of the President, first.

Report of the President

I have not any prepared report, but I certainly am thankful for all the assistance I have been given throughout the past year in trying to make this meeting we are entering upon a success, and I am delighted and feel highly honored as I know you all do in having with us Dr. John W. Cline, President of the American Medical Association. I am pleased to introduce him at this time.

I feel we are going to have a most successful session, and I hope we will have a very large attendance.

We will proceed now with the Report of the Treasurer, Dr. Messick.

Report of the Treasurer

January 3, 1951 to September 30, 1951

General Fund

Balance in checking account January 3, 1951		$ 7,910.66	
Cash on Hand		0.00	
			$ 7,910.66
Receipts			
Dues and Assessments			
New Castle County	$11,747.50		
Kent County	1,000.00		
Sussex County	1,850.00	14,597.50	
Delaware State Medical Journal		1,824.00	
Refunds from A. M. A.		322.35	
Dividends		105.00	
Exhibits		875.00	
			17,723.85
TOTAL			$25,634.51
Disbursements			
Salaries			
1. Executive Secretary		$ 3,267.00	
2. Stenographer		356.65	$ 3,623.65
Taxes			
1. Collector of Internal Revenue			
—Income tax withheld	$972.00		
—Social Security tax	108.00	1,080.00	
2. Delaware State Tax Dept.		14.10	1,094.10
Office Expenses			
1. Printing, Stationery & Postage		71.82	
2. Badges		35.19	
3. Magazines		10.00	
4. Miscellaneous		99.05	216.06
Operation			
1. State Medical Journal		880.50	
2. A. M. A.		7,210.00	
3. Committees and Conferences		10.00	
4. Auditor		175.00	
5. Insurance and Bonding		25.00	
6. Group Hospital, Inc.		6.06	
7. Flowers		30.00	
8. Shearon Medical Legislature Service		12.50	
9. Refund New Castle County Med. Soc.		400.00	
10. Hotel Du Pont		64.65	
11. Miscellaneous		12.00	8,825.71
Travel			
1. Delegates to Atlantic City and Cleveland Sessions			166.04
Annual Session (1951)			
1. Programs and tickets			186.50
TOTAL			$14,112.06
Balance in checking account October 3, 1951			$11,522.45

ASSETS

Balance in checking account Sept. 30, 1951	$11,522.45
3 $1000.00 Series F War Bonds (May 1943)	2,622.00
7 Shares Farmers Bank of Delaware	2,800.00
Wilmington Savings Fund Society (Defense Fund)	4,063.57
Total Assets, September 30, 1951	$21,008.02

Respectfully submitted.

Jos. M. Messick, *Treasurer*

On motion, seconded, the report was accepted and filed.

President Wagner: Next will be the Report of the Executive Secretary, Dr. W. Edwin Bird.

Report of the Executive Secretary

Your Executive Secretary reports that the volume of work for the year just passed shows a moderate increase over the previous year. The correspondence and other work is on a current basis.

We made an official visit to the Sussex Society and to the Kent Society in March. Both of these meetings were very enjoyable and we hope we imparted some information of value. We have attended numerous committee meetings and conferences in the state.

In addition, we attended the Middle Atlantic States Conference in Philadelphia in November; the A. M. A. Public Relations Conference in Cleveland, in December; the National Federation of State Boards in Chicago, in February; the Blue Cross-Blue Shield Medical Directors Conference in Biloxi, in April; and the Medical Society Executives Conference in Atlantic City, in June.

The membership of the Society is as follows:

October, 1950		304
Additions		
New Members	33	
Reinstated	9	42
		346
Losses:		
Deaths	3	
Transfers Out	13	
Expelled (Nonpayment)	3	19
October, 1951		327

(N. C. 260 + K. 25 + S. 42)

A gain of 23 members, as compared with a gain of 13 members the previous year.

The State Board this year has licensed 28 new physicians, 23 of whom will probably remain in this State and within a year will be eligible for membership in this Society.

Our exhibits this year are slightly more numerous, and 22% larger in revenue than in any previous year, amounting to $1180.00. The total registration in Wilmington in 1949, totaled 325 and we hope this figure will at least be equalled this year; in fact, it should show a definite increase. We urge all our members and the members of the Women's Auxiliary to visit and ask questions at every booth and to sign a card at every booth.

We have proposed four amendments to the By-Laws of this Society, which were published in the July issue of the Journal, page 188, thus giving all members due notice. There should be little or no question about the adoption of these By-Laws.

We make two recommendations at this time, namely: that the title of the Committee on Hospitals and Practice of Medicine be changed to Committee on Hospital-Physician Relationships, thus bringing it in line with similar ones in other states. Also, that the ttle of the Committee on V. A. Contract be changed to Committee on Military and Veterans Affairs.

We have assisted in preparing a program for this Session which we hope you will like. It is well balanced, and the essayists are all men who rank high in their respective subjects. This year we are initiating a new color scheme for our programs: white, for the meetings in New Castle County; blue, for the Blue Hen's Chicks, for the meetings in Kent County; and yellow, for the golden sands of our seashore, for the meetings in Sussex County.

In conclusion we wish to thank all of the officers and members of the Society and of the Auxiliary with whom we have had official business during the year. Their cooperation has been splendid and we gratefully acknowledge it.

W. Edwin Bird, *Executive Secretary.*

President Wagner: I am sure we are very grateful to Dr. Bird for this fine report. He has served the Society well and efficiently throughout the past year and I am sure we are all gratified with this splendid report.

Motion that the report be approved was seconded, put to a vote and carried.

President Wagner: Dr. Cline wishes to be excused at this time. We realize that Dr. Cline has had a very strenuous day. His plane was three hours late in arriving, and I am sure we are honored and delighted to have him with us, and expect to see him tomorrow at our meeting. Thank you, very much, Dr. Cline.

We will go to the Standing Committees. First the Committee on Scientific Work.

Report of the Committee on Scientific Work

Secretary Gehret: In the absence of Dr. Comegys, I will report for him by saying I believe the program as arranged will speak for itself.

President Wagner: Thank you. Is there any action to be taken on that report?

On motion of Dr. Chipman, seconded by Dr. J. C. Pierson, the report was accepted.

There was no report of the Committee on Medical Education.

President Wagner: Committee on Publication—Dr. Bird.

Report of the Committee on Publication

As heretofore, we transmit the report of the Committee in two parts: (1) that of the Editor; and (2) that of the Managing Editor.

Report of the Editor

We are nearing the end of Volume 23 of the New Series. The amount of material published is about equal to that of Volume 20, which was the largest in the history of The Journal. Through the excellent cooperation of the hospitals and of other contributors, together with the papers from our Annual Session, we generally have a small surplus of material on hand—a healthy condition which we hope will continue. The scientific value of the material contributed by our own profession in Delaware is definitely improving—another healthy condition which we hope will continue.

Our printers, The Star Publishing Company, again deserve a most kind word for their continued courtesies and efficiency, and to their entire staff must go again our thanks.

To all our officers and members, whose continued cooperation sustains us, we offer our grateful thanks once more.

Respectfully submitted,
W. Edwin Bird, *Editor*

Report of the Managing Editor

August 1, 1950 to August 1, 1951

A. Checking Account

Checking Account, Wilmington Trust Co., August 1, 1950		$3,128.81
Receipts		
Advertisements	$8,039.31	
Bonus on ads AMA	422.54	
Subscriptions		
Med. Soc. Members, Present Year	898.50	
Others	111.20	
Single Copy Sales	7.50	
Halftones	208.18	
Interest on War Bonds (These bonds in the amount of $3,502.98 were purchased Dec. 10, 1942)	87.50	
Total Receipts		$9,774.73
Disbursements		
Printing and Mailing Journal	$6,776.28	
Editor's Salary	2,400.00	
Stenographer	480.00	
Stationery and Supplies	103.50	
Notary Fees	1.00	
Postage	1.37	
Telegrams	2.42	
Bound Volumes	15.75	
Copyrighting Journal	48.00	
Bonding Stenographer and Managing Editor	32.50	
Medical Society—Overpayment on Subscriptions	24.00	
Single Copy purchased from Mental Hygiene	.50	
Total Disbursements		$9,885.32
Deficit		$ –110.59
Transferred to Wilmington Savings Fund Society		1,000.00
Balance in Checking Account, August 1, 1951		$2,018.23

B. Savings Account

Savings Account, Wilmington Trust Co., August 1, 1950	$1,619.27
Interest	$ 15.00
Balance in Savings Account, Wilmington Trust Co., August 1, 1951	$1,634.27

Savings Account Wilmington Savings Fund Society, August 1, 1950		$2,012.50
Transferred from Checking Account, Oct., 1950	$1,000.00	
Interest	54.46	1,054.46
Balance in Wilmington Savings Fund Society, August 1, 1951		$3,066.96
Balance in Savings Accounts, August 1, 1951		$4,701.23

C. WAR BONDS

U. S. War Bonds (December 10, 1942)	$3,502.38

SUMMARY

B.	Savings Accounts Balance	$4,701.23
A.	Checking Account Balance	2,018.23
C.	U. S. War Bonds	3,502.38
	Grand Total, August 1, 1951	$10,221.84

On motion seconded, the report was accepted.

PRESIDENT WAGNER: We will now have the Report of the Committee on Public Laws—Dr. J. S. McDaniel.

Report of the Committee on Public Laws

The Public Laws Committee is pleased to present a favorable report considering the activities of the last session of the Delaware State Legislature. Very few bills which concerned the medical profession were presented and the results were satisfactory. We were very fortunate to have several Senators and several members of the House who were very cooperative with our Committee.

Owing to the possibility of World War III during the next two years we presented a bill which would give the Medical Council of Delaware the power to issue a temporary emergency license, under certain restrictions, to a physician whose services are needed in a town or city of this State or in an industrial plant. This bill is practically the same as the one used in 1942, during World War II, which served a very useful purpose.

This Committee, in conjunction with the Medical Council and the State Board of Medical Examiners, proposes to make a careful, new study of the Delaware Medical Practice Act. This Act needs clarification in certain items and amplification in certain others. This Committee will present the proposed changes to the House of Delegates at its 1952 meeting, which will be in ample time to prepare for the 1953 Legislature.

Respectfully submitted,
JOSEPH S. MCDANIEL, *Chairman*

On motion, seconded, the report was accepted.

PRESIDENT WAGNER: Next, the Committee on Budget. Dr. Messick will read the report.

Report of the Committee on Budget

Receipts

Operation:		
Membership Dues—current	$7,200.00	
Exhibits	600.00	
Dinner subscriptions	525.00	
Refunds from A. M. A	75.00	
TOTAL	$8,100.00	
Investments:		
Dividends	105.00	
Interest	95.00	
GRAND TOTAL		$8,600.00

Disbursements

Salaries (Part time) (A)		
Exec. Secretary	$3,000.00	
Stenographer	750.00	
S. S. Tax (Employer's part)	50.00	
TOTAL (A)	$3,800.00	
Office: (B)		
Printing, Postage		
Stationery & Supplies		
Tel. & Telg.	250.00	
Magazines	30.00	
Miscellaneous	20.00	
TOTAL (B)	$ 300.00	
Operation: (C)		
Jour. Subs.	875.00	
Committees & Conferences	300.00	
Auditor	175.00	
Mid Atlantic State Conf. on Medical Service (special)	150.00	
Insurance & bonding, safety deposit box, miscel.	100.00	
TOTAL (C)	$1,600.00	
Travel: (D)		
AMA Conventions (2)	400.00	
AMA Conferences	300.00	
Local	100.00	
TOTAL (D)	$ 800.00	
Exhibits: (E)		
Rental	(125.00)*	
TOTAL (E)		
Annual Session: (F)		
Rental of Hall		
Annual Session	250.00	
Stenotypist	275.00	
Programs & ticket.	250.00	
Badges	75.00	
Public address system		
Lantern operator		
Luncheon	450.00	
Reception	150.00	
Dinner	550.00	
Entertainment	100.00	
Music & flowers		
Miscel.		
TOTAL (F)	$2,100.00	
GRAND TOTAL		$8,600.00

*Charge against rental of hall—Annual Session

On motion, seconded, the report was accepted.

PRESIDENT WAGNER: We shall next proceed to the Report of the Woman's Auxiliary to the Medical Society of Delaware. Dr. Gehret will read the report.

Report of the Woman's Auxiliary

The Woman's Auxiliary of the Medical Society of Delaware is completing its 22d year of activity with a membership of 185.

Kent County organized last year with seven members and now has a membership of sixteen. Sussex County had twenty-five members last year; this year the number is only nineteen. We are hoping to regain and possibly increase the membership. New Castle County has a membership of 150. An invitation to join the auxiliary was sent to all doctors' wives who are not now members. Twenty-two expressed a desire to join and some expressed a desire to join later.

The overall program of the auxiliary has included many phases. It is our aim to have a balanced program that will interest all of the members. We have had a speaker on voluntary health insurance (Blue Cross and Blue Shield) as well as a lecture on the welfare organizations in Delaware. To this lecture invitations were issued to seventy women's clubs in New Castle County. Afternoon teas was served to members and guests in the library.

Pertaining to the nurse scholarship; one girl completed her first year of training. The second girl entered one of the Wilmington hospitals the first of September. The cost is $100.00 a year per student. In New Castle County a series of bridge parties were held. The total sum collected from these parties was allotted to the scholarship fund. Sussex County held white elephant auctions after each meeting. The money realized was donated to the fund. Kent County is contributing a sum of money from its treasury.

A most successful Valentine party was given for 280 children at the Governor Bacon Health Center. Entertainment and refreshments were the delight of the children.

Members of the New Castle County Auxiliary met one night a month to sew baby dresses which were donated to the Visiting Nurse Association. Last year 170 dresses were completed.

Kent County made dressings to be used by the visiting nurses for cancer patients.

The constitution and by-laws of the state auxiliary are being revised and rewritten. This has taken many hours of hard work by the revisions chairman.

Our legislative chairman has reviewed the literature received from the A. M. A. and Washington, reported on Delaware legislation and attended meetings sponsored by women's legislative clubs. This enabled her to give a comprehensive report.

Subscriptions to the Bulletin (official auxiliary magazine) have increased this year.

A dinner dance sponsored by the auxiliary was held at the Du Pont Country Club.

Questionnaires were sent to all members in the auxiliary to ascertain the number who have specific training in health projects and who would contribute volunteer hours.

Believing that community service is one of the best ways to create good public relations, the members have participated in various health drives. Next year we hope to increase our membership and to take a more active interest in welfare projects.

This has been a busy and rewarding year for us all.

Respectfully submitted,
CATHERINE M. GAY, *President*

PRESIDENT WAGNER: You have heard the reading of this very fine report. We have a very active organization on our Woman's Auxiliary. I know it has been a great pleasure to all of us to hear this very fine report. What action shall be taken on this report, gentlemen?

On motion, seconded, the report was accepted.

DR. E. R. MAYERBERG: May I ask a question about the Budget Committee's Report? I asked the same question last year at this time. I don't see any allotments here for running the various departments of the Society. I remember not long ago Dr. Messick sent out a questionnaire wanting to know how much money I expected to spend during the time of the year specified. I answered that, but I see no indication here that I sent it, or that it was accepted. Some of these committees do require funds. The Public Relations Committee requires some money. We have radio time, and at times we have articles that we want to have published, and we have to have money to do it with.

PRESIDENT WAGNER: I don't know whether Dr. Messick would like to speak to this point or not. Dr. Messick?

DR. MESSICK: Questionnaires were sent to all committees; all committees except one said that they expected to require no funds for the coming year. That one committee said they expected they would need $50.00 for the coming year—so we allotted $300 for the committee.

DR. MAYERBERG: Thank you. That clears that.

PRESIDENT WAGNER: We will next go to the Reports of Special Committees. Dr. Gehret will read the report of the Advisory Committee to the Woman's Auxiliary.

Report of the Advisory Committee to Woman's Auxiliary

The Committee has not found it necessary to have any meetings during the past year. On several occasions the Chairman of the Committee has been consulted by Mrs. Douglas Gay, President of the Woman's Auxiliary about minor matters which were not of sufficient importance to refer to the Committee as a whole.

Respectfully submitted,
ROGER MURRAY, *Chairman*

On motion, seconded, the report was accepted.

PRESIDENT WAGNER: Report of the Committee on Cancer. Dr. Gehret will read the report.

Report of the Committee on Cancer

The problem of cancer in Delaware is increasingly pressing and is approached from many angles by several agencies.

The Memorial and Delaware Hospitals in Wilmington and the Beebe Hospital in Lewes maintain cancer clinics recognized by the American College of Surgeons.

Cancer detection centers are made available throughout the state by the Delaware Division of the American Cancer Society and a mobile unit of the Cancer Control Division of the State Board of Health.

The need for beds for the chronically ill cancer patient is one of the greatest problems and is partially met by the facilities of the Governor Bacon Health Center.

Assistance to needy cancer patients in the line of dressings, loans of appliances, transportation, and in meeting the expenses of medicines and hospital care beyond the assistance from the Levy Courts is supplied by the Delaware Division of the American Cancer Society. Nursing assistance is given by the Public Health Nurses and the visiting Nurse Association.

Education in cancer is extended to the public by the Cancer Society through printed matter, lectures and movies and to physicians through the medium of a cancer bulletin distributed by the State Board of Health.

A research project bearing on cancer is in progress in the biology department of the University of Delaware.

The State Board of Health has simplified its records for the statistical study of cancer in the state and is currently transferring the data from the records of about 7000 cases to punch cards.

It is encouraging to note an increasing spirit of cooperation among all concerned with cancer control.

Respectfully submitted,
DOUGLAS M. GAY, *Chairman*

On motion, seconded, the report was accepted.

PRESIDENT WAGNER: Next the Report of the Committee on Tuberculosis. Dr. Gehret will read the report.

Report of the Committee on Tuberculosis

Your Committee on Tuberculosis wishes to submit the following report for the past fiscal year from July 1, 1950 to June 30th, 1951.

Tuberculosis Mortality — Delaware
(January 1, 1950 to December 31, 1950)

White	Non-White	Total
39	32	71

The tuberculosis mortality rate per 100,000 population for the fiscal twelve months stated is 22.3. The population of Delaware used was 318,085.

The average daily population of Brandywine Sanatorium was 108.46. There were 104 admissions of which 65 were male and 39 were female. During this same period, there were 101 discharges of which 69 were male and 32 were female. At Edgewood Sanatorium, there were 55 admissions and 41 discharges.

Through the State Board of Health Chest Clinics, there were 3829 examinations made of which 1465 were first visits to the clinic. Of these 1465 first visits, 34 were found to have active tuberculosis; 19 had inactive tuberculosis; 14 had tuberculosis with undetermined activity, which were later rechecked either by x-ray or fluoroscopy to definitely determine activity or inactivity; and 769 were contact examinations. Tuberculin testing continues to be done in these clinics of the contacts under 14 years of age.

The Delaware Anti-Tuberculosis Societly continues to co-operate with the State Board of Health in tuberculin testing, x-raying, and fluoroscopies. The Delaware Anti-Tuberculosis Society, during its past fiscal year (April 1, 1950 to March 31st, 1951), x-rayed 3030 cases which include rechecks on the below mobile unit survey and direct referrals.

During the past calendar year 1950, the mobile x-ray unit took a total of 20,437 x-rays which include the following:

Schools, Industries, Community Surveys, Food Handlers, National Guards, City Employees of Wilmington, Miscellaneous.

The mobile x-ray unit also took 1098 flat 14 x 17 films during the past fiscal year at the scheduled chest clinics throughout the State.

During this period, other cooperative activities of the Delaware Anti-Tuberculosis Society included:

394 bedside nursing visits on 32 patients were made by the Wilmington Visiting Nurses Association.
5,992 hospital routine x-rays were taken.
284 tuberculin tests were performed in the clinics.
3,829 fluoroscopic examinations made in the clinics.
20 persons rehabilitated.
19 persons now receiving vocational training.
142 persons rehabilitated since 1942.
61 schools enrolled in the Health Habit Course.
10,794 students enrolled in the Health Habit Course.

When the people speak often enough and loud enough—there is usually some resultant action. For the past year the people of Delaware—individuals, official health agencies, medical societies, the Anti-Tuberculosis Society, the press, radio stations, and nearly a hundred influential organizations joined hands in a concerted effort for the expansion and modernization of our two tuberculosis sanatoriums—Brandywine and Edgewood. Outside specialists were brought to Delaware by the Anti-Tuberculosis Society to survey these needs. Their recommendations were used as a basis for bills presented to the Legislature. The result was the appropriation of 2,000,000 to cover these improvements and $100,000 for additional operating expenses in the expanded and improved program.

Respectfully submitted,
L. D. PHILLIPS, *Chairman*

On motion, seconded, the report was accepted.

PRESIDENT WAGNER: The Report of the Committee on Social Hygiene. Dr. A. D. King, Chairman, will read his report.

Report of Committee on Social Hygiene

The control of venereal disease in the state of Delaware has progressed under a well organized system with facilities for both diagnosis and treatment readily available in each county.

The number of new cases of syphilis has been decreasing steadily for the past several years. Old cases are being given adequate therapy in a relative short treatment-time period. As a result, it has been possible to reduce the number of treatment centers and personnel, and to reduce the state appropriation for this purpose.

An exception to the above is a small seasonal increase of new cases of Syphilis in the lower counties as the migrant workers engage in the harvesting of farm crops each summer.

There has not been the same decline in new cases of gonorrhea, as has been noted in the case of syphilis, due to several factors, including reinfection.

The committee wishes to reemphasize the importance of prenatal serologic tests.

Respectfully submitted,
ALLEN D. KING, *Chairman*

On motion, seconded, the report was accepted.

PRESIDENT WAGNER: Report of the Committee on Maternal and Infant Mortality. Secretary Gehret.

Report of the Committee on Maternal and Infant Mortality

Before discussing the actual causes of maternal and infant mortality in Delaware in 1950, it might be well to enumerate the birth analysis in the various sections of the state.

The total number of births in 1950 was 7768 Of these 6409 were white and 1359 were colored. In New Castle County, including Wilmington, 99.8% of the white infants born were attended by physicians and of these 98.8% were born in hospitals. Of the colored infants 42.7% were attended by physicians and 92.7% delivered in hospitals, which is a little difficult to explain, unless the babies were delivered by persons other than licensed physicians in hospitals.

The total number of births in Kent county was 4638 white and 811 colored. Of the white babies 95.4% were delivered by physicians and 91.3% were born in hospitals; white 44.0% of colored babies were delivered by physicians and 34.2% were born in hospitals. The total number of babies was 556 white and 159 colored.

In Sussex county 98.2% of white babies were delivered by physicians and 85.1% were born in hospitals, while 47.7% of colored babies were delivered by physicians and 34.7% were born in hospitals. The total number of babies was 1215 white and 389 colored.

In New Castle county 98.8% of the white mothers had a Wassermann test and 96.9% of the colored. In Kent county 92.5% of the white mothers had a Wasserman test and 84.7% of the colored. In Sussex county 91.6% of the white mothers had a Wassermann test and 77.6% of the colored.

The premature birth rate (the number of prematures per 1000 live births) was 28.1 for whites and 85.6 for colored in New Castle county. In

Kent county it was 52.2 for whites and 78.7 for colored. In Sussex county it was 58.4 for whites and 96.0 for colored.

The illegitimate birth rate (number per 1000 live births) was 19.6 for whites and 225.8 for colored in New Castle county. In Kent county it was 31.4 for whites and 300.9 for colored. In Sussex county it was 27.7 for whites and 353.2 for colored. The percentage of those mothers who had prenatal Wassermanns 89.1% for whites and 94.2% for colored in New Castle county; 76.1% for whites and 89.2% for colored in Kent county; and 71.4% for whites and 98.3% for colored in Sussex county.

The total number of still-births in the state was 148 of which 103 were white and 45 colored. By counties these are divided as follows: In New Castle the rate was 36.1 for whites and 49.1 for colored; in Kent the rate was 23.8 for whites and 18.5 for colored; in Sussex the rate was 13.9 for whites and 45.1 for colored. The still birth rate is the number per 1000 live births.

The Maternal mortality (the rate per 1000 live births) was 0.9 for Delaware in 1950. The rate for the past ten years was 5.5 in 1940; 2.3 in 1941; 1.7 in 1942; 2.3 in 1943; 1.7 in 1944; 3.0 in 1945; 1.0 in 1946; 1.1 in 1947; 0.9 in 1948; 0.7 in 1949. The total number of maternal deaths in 1950 was 7, which are listed as follows; one white from toxemia of pregnancy and hyperemesis gravidarum; one white of placenta praevia; one colored (none white) of complications arising from pregnancy; one white of sepsis following induced abortion; two colored sepsis of childbirth and the puerperium; one white puerperal pulmonary embolism.

The maternal mortality rates by counties is as follows:

In New Castle 0.5 for white and 2.6 for colored; in Kent 1.5 for white and 0.0 for colored; in Sussex 0.0 for white and 2.8 for colored.

It is possible to infer from the above detailing of the causes of maternal mortality that it can be brought to a lower figure in the future with adequate ante-partum care.

The total number of infants who died in the neonatal period was 168, of which 135 were white and 35 colored. In the period from one month to one year, the total was 69, of which 44 were white and 25 colored. This would give a neonatal death rate by counties of 19.3 for white and 33.4 for colored in New Castle county; 20.9 for white and 13.9 for colored in Kent county; 28.7 for white and 39.5 for colored in Sussex. The mortality rate for the entire state was 20.7 for white and 25.7 for colored, or an average rate of 21.6.

The causes of death of infants in the first year were many and various and roughly divided into the following groups:

Tuberculosis meningeal	1 case
Whooping cough	3
Meningococcal infections	2
Thymus gland disease	3
Upper respiratory infection and pneumonia	15
Acute gastro enteritis	4
Congenital malformations	28
Intracranial and other injuries at birth	16
Immaturity	106
Erthroblastosis	4

There were a number of single causes of death of infants which are too numerous to list, but the above figures would indicate that the greatest loss of life in the early period of infancy is caused by immaturity. It is in this group that much work remains to be done in salvaging a greater number.

Respectfully submitted,
A. H. Wlliams, *Chairman*

We gratefully acknowledge the assistance given by Cecil Marshall, Statistician, to the State Board of Health, who provided the statistics upon which the report is based.

On motion, seconded, the report was accepted.

President Wagner: The Committee on Mental Health. Dr. Gehret will read the report.

Report of the Committee on Mental Health

Committee on Mental Hygiene

There has been no meeting of the Committee on Mental Health so the Chairman now makes a report on his own.

Last year a report was made advising that we felt that more housing and beds be provided as a marked lack of these facilities existed in this State as well as practically all other, or at least a great many of other States. We still feel that there is great need in this community for proper care of all mental cases and particularly the Seniles.

Respectfully submitted,
G. W. K. Forrest, *Chairman*

Dr. Tarumianz: Mr. President, may I have a word? I would like to ask your indulgence because I think the Medical Society of Delaware should become more cognizant of the fact that in Delaware we have a school for the feebleminded. There are about 500 children and adults taken care of by that institution. It is my opinion that the Medical Society of Delaware should assume some responsibility in investigating and finding out what services from a medical viewpoint are they rendering to those children and adults. I think we can not continue to be lethargic about the feeble-minded in this state. It is my candid opinion that we have been lethargic too long, and laymen have assumed the responsibility of such a serious problem as mental defectiveness, which, after all, is a medical problem. Since it is a medical problem, I do believe this Society should appoint a special committee to survey the situation of feeblemindedness or mental defectiveness in this state to find out what services are available, what should be done to correct any deficiencies that may exist, and what the Medical Society could do to help the layman establish better conditions and better services in that particular field.

That is my motion, Mr. President. I would like to move that that be considered in conjunction with this report, because that applies to mental health.

President Wagner: We will bring it up under New Business.

Dr. Tarumianz: That's all right. Thank you.

President Wagner: The motion is to accept the report of the Committee on Mental Health.

On motion, seconded, the report was accepted.

President Wagner: Next the Report of the Committee on Heart Disease. Dr. Gehret.

Report of the Committee on Heart Disease

All members of this Committee have served on the Medical Advisory Board of the Delaware Heart Association during the past year.

It has been the responsibility of this Board to go forward in the working out of plans as outlined in last year's report from this Committee for the installation of an angiocardiograph machine in the Delaware Hospital Cardiac Clinic. We are now able to state that all of the details have been worked out with the Hospital Board and that the machine should be ready for work within the next three or four months.

The problem of how to arrange for cardiac surgery for patients unable to pay part or all of the costs has repeatedly confronted this committee as well as the individual physician. Surgery of this type has to be done in out-of-state hospitals. The D. H. A. Medical Advisory Board wrote to Johns Hopkins, University of Pennsylvania, and the Peter Bent Brigham Hospital to inquire about costs on special diagnostic studies and surgery. The estimated total cost per patient for diagnostic studies, ward care, and surgery if indicated were quite uniform—approximately $500 per patient.

Past records in Delaware indicated that about 12 child patients a year are presented with recommendations for special diagnostic studies and possible surgery. The Medical Advisory Board of D. H. A. recommended to the Board of Directors and Finance Committee that an emergency fund of $3,000 be set aside for emergent cases that have to be sent out of state for the services described. To date five child patients have been cared for under this plan.

This Committee on Heart Disease has continued to encourage and sponsor education in cardiology on both the professional and layman levels. Dr. Charles A. R. Connor, of the American Heart Association, was guest speaker at the Academy of Medicine on May 8th, 1951, members of the DHA Medical Advisory Board and others of the Medical Profession attending. Dr. Connor stressed the need for a broad program of education as a means of creating an awareness on the part of both professional and lay people of the great need for an expanded program of research on heart disease. Dr. Connor further stated that adequate funds for the support of research and community services would only be forthcoming to the extent that a good program of lay-education was conducted on a year-round basis.

The Medical Advisory Board of D. H. A. is now giving consideration to a proposed local research project, the proposed study being the correlation of adrenal, renal, and electrolyte abnormalities in the pathogenesis of heart failure. This study to be done by Dr. Richard A. Neubaur, Director of Medical Research at the Memorial Hospital, in Wilmington.

Respectfully submitted,
Edgar R. Miller, *Chairman*

On motion, seconded, the report was accepted.

President Wagner: Next the Report of the Committee on Diabetes. Dr. Gehret will read the report.

Report of the Committee on Diabetes

The Committee has centered most of its attention this year in cooperation with the American Diabetes Association in its effort to find the unknown diabetics in Delaware and has further concentrated its efforts in placing special emphasis in acquainting members of the profession with the practical methods of discovering the asymptomatic and unknown diabetic and in asking the cooperation of all the physicians in the state in this national effort. After coming to this decision, the Committee was gratified in learning that this also was of especial interest this year to the American Diabetes Association.

Therefore your Committee asks that the Medical Society of Delaware endorse this general plan and in particular ask that it approve the attached letter, to be sent to all the physicians in the state, and along with it a circular from the American Diabetes Association. Your Committee further suggests that the details of this circularization should be handled by each County Society and asks the House of Delegates whether it feels that the State Society or the County Societies should be responsible for the moderate expenses involved.

Respectfully submitted,
Lewis B. Flinn, *Chairman*

Diabetes Week 1951 is November 11 to 17

Objective: To find the unknown diabetics.

The Medical Society of Delaware and the American Diabetes Association ask the cooperation of every physician in the state by observing the following suggestions:

1. Urge every patient, relative and employee to have a post prandial urinalysis or blood sugar once a year.
2. Post prandial means one to two hours after eating a full meal containing at least 100 gm. of carbohydrate.
3. If sugar is found in post prandial urine, do a post prandial blood sugar.
4. If post prandial blood sugar (Folin-Wu, venous) is over 140 mg.%, do a glucose tolerance test after three days of a normal diet.
5. Remember that many mild diabetics have fasting blood sugars below 120 and have sugar free urine before breakfast.
6. Please offer to make post prandial urinalyses without charge during Diabetes Week.

Diabetes Committee
Medical Society of Delaware

Dr. Gehret: Then there is also a pamphlet which accompanies the report, "Finding the Diabetic in Your Community."

On motion, seconded, the report was accepted.

President Wagner: Next the report of the Committee on Arthritis. Dr. Gehret will read the report.

Report of the Committee on Arthritis

There is now an active arthritis clinic conducted at the Delaware Hospital weekly. Three hundred ninety clinic patient visits have been recorded for the past year.

We are now working on a new type of therapy in conjunction with a Philadelphia group. Thus far the treatment appears to give results far superior to all previous drugs, including cortisone.

At a later date we hope to be in a position to present statistics to prove our present beliefs.

Respectfully submitted,
Arthur J. Heather, *Chairman*

On motion, seconded, the report was received.

Dr. Tarumianz: Is there any description of the new method?

Dr. Gehret: No description, no. He says at the bottom "At a later date, we hope to be in a position to present statistics to prove our present beliefs."

President Wagner: Report of the Committee on Medical Service and Public Relations. Dr. Mayerberg will read this report.

Report of the Committee on Medical Service and Public Relations

The report of your Committee on Medical Service and Public Relations will be brief this year, because we have been called upon to do very little work.

Last year we sought speaking engagements and reported a number that we had accepted and fulfilled. This year, because of the success of the National Campaign of the American Medical Association, we have not sought engagements and have had just two or three requests, each of which we accepted.

Your Committee feels that we have pretty well acquainted the people of Delaware with the dangers of socialized medicine and we know that our Senators and our Congressmen are with us in our fight to prevent socialization of our government.

We receive frequently Dr. Lawrence's letter from Washington and also communications from American Medical Association headquarters. Whenever they suggest that we let our Representatives in Congress know our attitude on bills affecting medicine directly or indirectly we do so immediately.

Congress has been flooded with bills this year. At this writing the Senate has received 5,130 bills and the House 2,000 bills. Of all of the 7,130 bills 115 have become law, that is, passed by both houses and signed by the President. Most of them have been routine appropriation bills. We cite this to show that Congress has the courage to resist pressure from the administration.

Your Committee feels now that our campaign should be one of watchful waiting, that we should avoid stirring things up, but to meet opposition forcefully when it occurs.

Some of us think that our battle has been won, at least for ten years; our reasoning being that:

1. Congress will not pass any socialized medical bills this session because next year is an election year.
2. There will be a change of administration in 1953.
3. The new party will stay in at least eight years.
4. No bills will be passed during a Republican administration unless they do a complete about face.

If our prognostication is correct, American medicine has a full ten years to clean its house and produce a satisfactory plan for taking care of those who can pay as well as the indigent.

Your Committee in two previous reports has recommended the following:

1. That each county society promulgate a positive plan for the adequate care of indigent patients in each county. This group has been ignored by most plans dealing with medical care. It is a group whose care presumably must be met by tax-supported and/or voluntary agencies. The operation of the Maryland plan is to be investigated in this connection.
2. That physicians in each community in the state make arrangements for covering emergency cases during office hours, nights and holidays through cooperative agreements with one another.
3. That no physician leave his practice without having medical coverage for his patients while he is away.
4. That the state and county societies set up councils on health and sanitation to advise government agencies, state, county and municipal, on questions of health and sanitation.
5. That the state society appoint a committee to investigate the medical care received by the colored citizens of Delaware.

Nothing has been done about any of these recommendations so far.

Your Committee recommends that the incoming President each year name his committees and have the list in the hands of the Executive Secretary in time to be published in the December issue of the State Journal to save time and to insure a more coordinate organization.

Respectfully submitted,

E. R. Mayerberg, *Chairman*

On motion, seconded, the report was accepted.

President Wagner: Report of the Commitee on Emergency Medical Service. Dr. Gehret will read this report.

Report of the Committee on Emergency Medical Service

Your Committee on National Emergency Medical Service has held no committee meetings during the year.

The members of the committee, however, are participating in the civil defense program in operation in the city of Wilmington.

The New Castle County Medical Society is cooperating with civil defense officials in the development of plans by hospitals and the Delaware Chapter of the American Red Cross.

Efforts are being made in the hospitals to prepare for the care of large numbers of casualties by increasing the bed capacity of each institution, operating room facilities, and the organization of a number of teams qualified and equipped to care for the various types of casualties, the enlargement of service teams and the procurement of increased nursing and other personnel.

The plans which are being developed involve the cooperation of the medical profession, boards of directors, administrators, nursing profession, and many others. The problems to be solved are many and complex. Much remains to be done at every level.

Joseph R. Beck, *Chairman*

On motion, seconded, the report was accepted.

President Wagner: Committee on Rural Medical Service.

Dr. Gehret: There is no report of this Committee.

President Wagner: Committee on Industrial Health.

Report of the Committee on Industrial Health

The Directory of Delaware Manufacturers, published by the Chamber of Commerce, Inc., Wilmington, lists 574 manufacturing establishments in the state. One hundred and ninety-one of these have a Wilmington address; 34 are in Milford, 29 are in Dover, 22 are in Laurel, 22 are in Seaford, 21 are in Newark, and 21 are in Lewes, representing the major concentrations of plants.

Thirty-one organizations in Delaware employ a total of 59 industrial nurses. I do not know the number of physicians serving industry full or part-time.

The chairman of this Committee has arranged for two speakers on the program of the Annual Meeting, Medical Society of Delaware, October 9th and 10th:

"Chemicals and Health" by John H. Foulger, M. D. (Director, Haskell Laboratory of Industrial Toxicology, Wilmington).

"Industry's Challenge to Medicine" by R. Ralph Bresler, M. D., Philadelphia.

During 1951 the chairman has addressed two communications to other members of this Committee requesting their opinions on various propositions and asking specific questions on the work of the committee. I have not had a single reply and must conclude that there is a notable lack of interest in the work of this Committee on the part of its constituents and probably on the part of the general membership of the Society. It is my hope that this situation may be corrected gradually through such devices as the two speakers on the forthcoming program and requests from representatives of Delaware industry for advice and guidance in this important application of the art and science of medicine.

Lemuel C. McGee, *Chairman*

On motion, seconded, the report was accepted.

President Wagner: Report of the Committee on Vocational Rehabilitation.

Report of the Committee on Vocational Rehabilitation

The Delaware State Rahabilitation Division, which began operation in 1939, is the only general agency in the Nation showing an increase in the number of persons rehabilitated into employment during each succeeding year. This past year, a new record has been set in the number of persons rehabilitated during any one year, so that the Division continued to show an increase in rehabilitations for still another year. For the fiscal year ending June 1951, 433 disabled citizens of Delaware were given various services in order to rehabilitate them to self-sufficiency. This compares with 423 persons rehabilitated last year. In addition to this figure, over 800 more were in the process of receiving some service or were being investigated concerning their eligibility for possible services. The total number of handicapped persons rehabilitated since the program began in 1939, to June 30, 1951, was 2,902.

Of the 433 disabled persons rehabilitated last year, 87% were unemployed at the time of referral. The average wage *before* rehabilitation was $3.28 per week; the average wage *after* rehabilitation services were provided increased to $38.88 per week. In one year only, without considering wage increases, the earnings of the rehabilitated persons would amount to $875,422.

Many of the handicapped persons referred to Vocational Rehabilitation are persons who have no means of support other than through State Welfare Agencies. There were 59 such persons referred to Vocational Rehabilitation of the 433 who were rehabilitated. These 59 persons also had 124 other members of the family dependent upon them, so that actually 183 persons were supported by welfare. On a yearly basis they were drawing $44,772 relief benefits. After various rehabilitation services were provided, at a total cost of $12,851, or $217.81 per case, the 59 persons were restored to employment and were *earning* $117,228 a year, or an average of $38.21 a week per person. Once dependent upon the State, they are now actually earning more than two and one-half times the amount which was previously spent on relief benefits.

On the basis of the number of rehabilitations per 100,000 population, Delaware for the fourth consecutive year ranked first in the 51 States and Territories which operate a rehabilitation program. As disclosed by the United States Office of Vocational Rehabilitation, for the fiscal year 1950, Delaware rehabilitated 141 persons per 100,000 population, South Carolina was second with 93, and Georgia third with 91. The National average was 40 rehabilitations per 100,000, so that we actually rehabilitated more than three times the National average. Delaware also continued to lead in the number of disabled persons served and in the number of persons in the active caseload per population. The National average of cases served per 100,000 population was 150, while Delaware had 457; the National average of persons in the active caseload was 94, while Delaware also ranked first in this category with 257. Our State's high rank has been maintained in spite of curtailment of staff in 1948.

The total cost of providing services to 1308 persons, including Federal funds for Administration and Vocational Guidance, was $140.55 per person; the cost to the State of Delaware alone (exclusive of Federal funds) was $45.69 per person. Figures show that it costs approximately $600 a year to maintain a person in idleness, a cost that oftentimes continues year after year. It costs on an average about $450 to rehabilitate one individual into suitable employment, a cost which is usually paid only once. It appears, therefore, to be sound economy and a good investment to furnish our disabled citizens with necessary services. We cannot compute in dollars and cents the happiness and self-respect of a person returned to independency.

The progress made by our State Rehabilitation Division is shown in this report, endeavoring to achieve the purpose for which this program was intended—"to restore as many of Delaware's physically and mentally disabled citizens as possible to become self-supporting." The Division again acknowledges the many courtesies extended by the members of the Medical Society of Delaware and sincerely expresses its thanks for their cooperation and interest.

James Beebe, *Chairman*

Motion seconded, that the report be received, was carried.

President Wagner: Committee on Health and Sanitation. Dr. Mayerberg would like to read the report.

Report of the Committee on Health and Sanitation

Your Committee on Health and Sanitation reports that during the past year organized medicine has actively cooperated with public health authorities at state and community levels in an overall program for the prevention and control of disease.

The Delaware State Board of Health and the Wilmington Board of Health, after full discussion with all of the pediatricians in Delaware, have placed in effect a program designed to bring about the immunization of all infants in Delaware against diphtheria, pertussis, tetanus and smallpox, beginning with the 4th month of life.

We are glad to report that public health authorities, in close cooperation with public and parochial school administrators, are immunizing in increasing numbers, school children against the diseases referred to above. This includes reinforcing the injections at intervals of 3 years.

It may be recalled that at the 1950 meeting of this Society, it was voted that we support the efforts of those who were seeking increased appropriations for the treatment and control of pulmonary tuberculosis.

It is a pleasure to record that as the results of the efforts of Dr. Gerald A. Beatty, with the active support of members of both political parties in and out of the Legislature and the Delaware Anti-Tuberculosis Society, a large sum of money, over $2,000,000, was appropriated.

With these funds it will be possible to construct a new building, alter old facilities, and employ sufficient personnel to provide competent care of those who are tuberculous, as well as to develop a sound program for the control of this disease in our state.

Victor D. Washburn, *Co-Chairman*

President Wagner: That is an excellent report. I want to thank the Committee for what it has done on behalf of the immunization of children in the State of Delaware.

Motion to accept the report made, seconded, and carried.

President Wagner: Committee on the Care of Colored People. There is no report.

Next the Committee on Medical Economics.

Report of the Committee on Medical Economics

The Medical Economics Committee of the Medical Society of Delaware is pleased to report that there is no apparent reason for economic assistance in Sussex, Kent, or New Castle counties.

Respectfully submitted,
Ira Burns, *Chairman*

On motion, seconded, the report was accepted.

President Wagner: Report of the Committee on V. A. Contract. Dr. Gehret.

Report of the Committee on V. A. Contract

This is a report of the Committee on revising the contract between the Medical Society of Delaware and the Veterans Administration.

The Committee had one meeting at which the fee schedule was reviewed. It was noted that in many incidents the fees contained in the Delaware and the Veterans Administration.
Societies of Pennsylvania and New Jersey. The entire fee schedule was revised, changing the fees in our contract to agree with those in the Pennsylvania or New Jersey contracts, which ever one was greater.

The only exception being the fees for various x-ray examinations and treatments. The x-ray fees set were those used by the x-ray department of the Delaware Hospital.

These revised fes were then sent to the Veterans' Administration and we asked that they review them and asked that they be used as a basis for a revised contract with the Medical Society of Delaware. The Committee has not yet been notified of any action by the Veteran's Administration.

The officers of the Medical Society of Delaware has been misinformed when they were told that no contract existed between the Veteran's Administration and the Medical Society for the year 1951. The contract had been reviewed and had been duly signed by the Secretary, Dr. A. Gehret.

Respectfully submitted,
Roger Murray, *Chairman*

Will someone move the adoption of this report with thanks? I think the Committee is to be highly complimented on the fine work they have done.

On motion, seconded, the report was accepted with thanks.

President Wagner: Committee on Fees for Welfare Patients. There is no report.

Report of the Committee on Hospitals and Practice of Medicine. The report will be read by Dr. Gehret.

Report of the Committee on Hospitals and Practice of Medicine

During the year the Committee approved having the President of the Society appoint two physicians to meet with representatives of the State Hospital Association and the Delaware State Nurses Association to study problems mutually concerned for the improvement of care of patients.

Since that time there has been no correspondence received from the State Hospital Association activating this Committee.

Respectfully submitted,
John W. Howard, *Chairman*

On motion, seconded, the report was accepted.

President Wagner: Report of the Grievance Board. Dr. Gehret.

Report of the Grievance Board

The Grievance Board has had no full meeting this past year. There have been six complaints, five of which felt that excessive rates had been charged: these cases were settled to the satisfaction of all parties by Dr. Chipman, our able secretary. One case is hanging fire and we trust the aggrieved party and others involved may be appeased after personal contact and investigation.

Respectfully submitted,
G. W. K. Forrest, *Chairman*

On motion, seconded, the report was accepted.

President Wagner: Report of the Delegates to the A. M. A.

Report of Delegates to the A. M. A., Dec. 1950

The Clinical or Interim Session of the A. M. A. was held in Cleveland, Ohio, December 5-8, 1950. Dr. James Beebe, our regular delegate, was unable to attend, and it was my pleasure to substitute for him as alternate delegate.

The General Practitioner's Award went to Dr. Dean S. Luce, Canton, Massachusetts, who was voted the outstanding general practitioner for the year 1950.

The sum of $500,000 was appropriated from the National Education Campaign for the aid and support of medical schools which are in need of additional financial support.

It was decided to continue the annual clinical sessions which are intended primarily for the general practitioner. The 1951 session was to be held December 4-7 in Houston, Texas, but the meeting place has had to be changed to Los Angeles, California. The 1952 session will be in Denver, and the 1953 session in St. Louis.

Respectfully submitted,
C. E. Wagner, *Delegate*

Report of Delegate to A. M. A. June 1951

The 100th annual session of the House of Delegates of the American Medical Association was called to order at 10:00 a m. by the Speaker, Frank Borzell. The secretary, Dr. Lull, called the roll and announced a quorum present. Following the Speaker's address, Dr. James P. Wall of Mississippi presented a resolution on the death of Dr. Roy W. Foutz, who died on March 27, 1951. Dr. Foutz served as Vice Speaker and Speaker of the House of Delegates and was Vice President of the A. M. A.

Dr. Louis H. Bauer presented the report of the Committee on Distinguished Service Award of the A. M. A. From the five names submitted the Board of Trustees selected the following to be voted on: Maj. Gen. Harry G. Armstrong, Surgeon General of the U. S. Air Force, Dr. Torald Sollmann, Cleveland; and Dr. Allen O. Whipple, New York City. On the final vote Dr. Whipple was declared to be the recipient of the distinguished service award for 1951.

This was followed by the address of the president, Dr. Elmer L. Henderson, which is printed in full in The Journal.

The president-elect, John W. Cline, and vice-president, R. R. Robins, were then presented to the House by the Speaker.

After these preliminaries, the House settled down to business. Following is a report giving the highlights of the session.

For the first time in its history the House of Delegates seated two medical students. These students are President and Vice-President of the Student American Medical Association, the objectives of which, so far, have been actively supported by societies organized in 40 medical schools.

Dave Beck of Seattle, executive vice-president of the International Brotherhood of Teamsters, addressed the House of Delegates and other officers of the American Medical Association at a dinner meeting given by the Medical Society of New Jersey. His paper 'Government Medicine—Danger Ahead", appears in the June 30th issue of The Journal. There was no doubt in anyone's mind concerning the forcefulness of Mr. Beck's message as he expressed support of the physicians' campaign against compulsory health insurance and opposition to government-regulated medical care.

The announcement of the Board of Trustees that it plans to appoint a committee of prominent laymen representing industry, labor, education, agriculture, the bar and the clergy, from which to seek advice in matters of medical care and from which it can obtain the viewpoint of the general public, was received with enthusiastic response. Several weeks may elapse before the members of the new committee can be announced, but the membership will be free of persons who are engaged in politics but who are so outstanding that their opinions will receive unquestioned respect.

Included in the officers elected were Louis H. Bauer of Hempstead, N. Y., as President-elect; Oscar B. Hunter, of Washington, D. C., Vice-President; David B. Allman, Atlantic City, to fill Dr. Bauer's term on the Board of Trustees; Walter B. Martin of Norfolk, Va., to succeed himself as a member of the Board of Trustees; and George F. Lull, Chicago; J. J. Moore, Chicago; F. F. Borzell, Philadelphia, and James R. Reuling, Bayside, N. Y., to succeed themselves as respectively, Secretary, Treasurer, Speaker, and Vice-Speaker of the House of Delegates.

The 1951 Clinical Session will be held in Los Angeles, December 4-7. The A. M. A. meetings which will be held between now and the end of 1954 are scheduled as follows: December 4-7, 1951, Los Angeles; June 9-13, 1952, Chicago; December 1-5, 1952, Denver; June 1-5, 1953, New York City; December 1-4, 1953, St. Louis; June 1954, San Francisco; December 1954, Miami.

The Council on Medical Service of the American Medical Association has maintained a physician placement service thru which communities have been assisted in obtaining the services of a physician. The Board of Trustees at the Atlantic City meeting urged expanding the Association's activities in this field and the further development of physician placement services in state medical societies. The Board will give support to this program by financing it to the degree demonstrated to be necessary.

Several resolutions were introduced concerning membership in the American Medical Association and the abandonment of Fellowship. The Reference Committee on Amendments to the Constitution and By-Laws approved in principle the resolutions concerning membership but believed the abandonment of Fellowship deserved further study. The Committee recommended that this subject be referred to the standing committee of the House on Constitution and By-Laws with instructions to prepare such changes in the Constitution and By-Laws, in consultation with the Board of Trustees, as may be necessary to carry out the recommendations. These changes are to be reported to the House of Delegates at the next meeting, December, 1951.

The House also considered another change in the Constitution which must lay over until the next session. At this time a change in the By-Laws will be necessary to permit the five immediate past presidents of the American Medical Association to become members of the House of Delegates for five years with the right to vote. The composition of the Board of Trustees also was changed to include the President and President-elect as members. Thus, in addition to the nine elected members, the Board of Trustees includes the President and President-elect.

Further consideration was given to the payment of dues for members in the American Medical Association. The 1952 dues of the Association were set at $25, this to include subscription to The Journal. Annual dues are prescribed for the ensuing calendar year in an amount recommended by the Board of Trustees and approved by the House of Delegates. Every active member pays his annual dues to his constituent association for transmittal to the secretary of the American Medical Association. The Board of Trustees may excuse a member from payment of dues for the following reasons, provided he is wholly or partially excused from paying local and state dues: (1) Members on whom the payment of dues would work a financial hardship. This fact may be certified to by the Secretary of the member's component society. (2) Members retired from active practice. (3) Interns and residents during the first five years following graduation, except that the time spent in the military service may be excluded in calculating the five-year limit. (4) A member temporarily in the Armed Forces. Dues will be remitted and pro-rated January 1 or July 1 following the date of the member's entrance into military service. (5) Members over 70 years of age may be excused, on request, from the payment of American Medical Association dues, regardless of local dues exemptions.

The firm of Whitaker & Baxter has been retained on a part time basis for 1952.

A lengthy and informative report submitted by the Committee on Blood Banks carried four recommendations of much interest to physicians: (1) that physicians and their families be urged to participate as donors for defense and civilian defense purposes, (2) that there continue to be developed state blood committees performing the functions above outlined, (3) that Congress be reminded of the urgent need for appropriations for reasonable federal stores of plasma and equipment for civilian defense, and (4) that physicians using blood recognize their responsibility in replacement from families and friends of patients.

The House adopted a resolution in which the American Medical Association requests Congress to make a thorough investigation of the school system in the United States with particular reference to the teachers and authors of textbooks advocating the overthrow of the American system of free enterprise by the infiltration of unAmerican policies of collectivism. A copy of this resolution was ordered sent to the President, Vice-President and members of the United States Senate and House of Representatives.

The House also adopted a resolution which voiced protest against the use of tax funds provided from the federal government for postgraduate courses in medicine. This resolution introduced by the Arkansas delegation urged the adoption of efforts to eliminate from future budgets the expense of conducting courses in postgraduate work for the medical profession, the Arkansas delegation asserting that it is the desire of the medical profession of Arkansas to pay personally such fees for postgraduate instruction as is received in the future.

The House adopted a recommendation for the creation of a national joint commission on accreditation of hospitals by the American College of Physicians, American College of Surgeons, American Hospital Association, and the American Medical Association. The American College of Surgeons for 25 or more years has administered a hospital standardization program. Because of the expense of the project, plans were proposed whereby several bodies would participate. A report and recommendations for the various interested groups has been proposed by committees from each organization. The joint findings will be acted on by the four associations before they can be accepted as the guiding principles for a national joint commission on accreditation of hospitals.

At the request of the Council on National Emergency Medical Service. the Board of Trustees agreed to undertake a study immediately for the purpose of making recommendations and meeting the medical problems which may arise with the legislation pertaining to the universal military training act in order to best serve the medical and health needs of the armed forces and of the civilian population of this nation. Complex and far-reaching medical implications are present in this Act.

An invitation was accepted by the Board of Trustees to meet with the officers of the American Hospital Association for discussion of Hospital-Physician relations.

The Board also has authorized the appointment of a Committee on Nervous and Mental Diseases since the American Medical Association does not have a committee on mental health.

Senator Robert M. Nixon of California, speaking at the Annual Conference of Presidents and Other Officers of State Medical Associations, said that physicians should become more interested in all types of political issues. At the same time, he commended the medical profession for its leadership in urging voluntary financial aid to medical schools.

Respectfully submitted,
James Beebe, *Delegate*

President Wagner: I wish to report, further, that owing to a severe coronary attack of Dr. Beebe, he feels it will be impossible for him to carry on as Delegate to the A. M. A., and that plans are being made at the completion of his term, this year, for his replacement.

At this time the Chair would like to receive a motion commending Dr. James Beebe for his long and faithful and efficient service representing this Society at the A. M. A. conventions.

Motion of commendation and acceptance of both reports was made and carried.

President Wagner: Next, the Report of the Representative to D. A. M. Dr. Gehret will read the report.

Report of Representative to D. A. M.

The increased interest of the medical profession in the Delaware Academy of Medicine is shown by the addition of 27 new members during the past year.

The Scientific Committee arranged two meetings as follows:

April 2, 1951, on Fluoridation of Municipal Water Supplies; the speakers were Francis B. Cramer, Ph.D., and Paul K. Musselman, D.D.S.

May 7, 1951—"The Use of Some Radioactive Isotopes in Medicine" by Lee E. Farr, M.D.

These meetings were aimed not only for the members of the medical profession but also for the lay groups, in an effort to serve also the general public which generously responded to the annual request for contributions and thus signified their interest in the Academy. Besides 205 active professional members the Academy has nearly 200 associate lay members, who are persons contributing annually $10.00 or more.

In order to increase the meeting facilities the Academy has purchased a 16 mm sound movie projector.

There has been a steady use of the Library by the members as well as local industrial organizations. Several new books have been added during the year. Also several gifts of books and journals have been received from the members of the Academy.

The building has been used during the year by the New Castle County Medical Society, Delaware State Dental Society, Delaware Pharmaceutical Society, Woman's Auxiliary to the Medical Society of Delaware, and the Delaware Heart Association.

The very successful year of the Academy has been only overshadowed by the sudden death of its President Dr. Bartholomew M. Allen.

Respectfully submitted,
W. O. La Motte, *Representative*

On motion, seconded, the report was accepted.

President Wagner: We will proceed to Unfinished Business, now.

Unfinished Business

Dr. Bird: The first item is in regard to the Report of the Executive Secretary who recommended that the title of the Committee on Hospitals and Practice of Medicine be changed to Committee on Hospital-Physician Relationships.

President Wagner: It is open for discussion and adoption.

Dr. Bird: The title "Committee on Hospitals and Practice of Medicine" implies maybe unnecessary and subtle charges that the hospitals are practicing medicine, whereas the problems that have been brought up, not here but in other states, are those primarily concerned with the relation of the physician to the staff and the hospital. Many of the other states have changed the name to Committee on Hospital-Physician Relationships.

Motion for adoption, seconded, was carried.

Dr. Bird: The other recommendation in the same report was with respect to the title of the Committee on V. A. Contract. The recommendation was that this be changed to Committee on Military and Veterans Affairs.

On motion, seconded, the recommendation was adopted.

Dr. Bird: The other was under Amendments. A Committee of Dr. McGee and Dr. John Pierson on Amendment No. 4, on "retired members" was appointed to reword this amendment. If they are ready to report with a recommendation for rewording, we can proceed.

Dr. J. C. Pierson: No report.

Dr. Bird: Then we cannot act on it tonight. This brings up a problem. Under the new By-Laws the amendment to our State Constitution or By-Laws can be made tomorrow, if there be unanimous consent. There will have to be a momentary session of the House of Delegates to approve these By-Laws. I think they should be approved tomorrow, otherwise, if there be one dissenting vote, they will lie over a year. That leaves the military men in jeopardy for a year. The state ought to go along, otherwise we don't know how to report those members to the A. M. A.

Dr. Washburn: There is only one of the amendments as I understood it, which was moot. Why can't we adopt those about which there is no discussion and let the one on which there is doubt go over.

I move the adoption of the first three proposed amendments to the By-Laws.

Dr. Mayerberg: I would go better than that. I move adoption of the whole lot, subject to the rewording of that particular paragraph about the retired members of the Committee of Dr. McGee and Dr. John Pierson.

The motion was seconded, and carried.

Dr. Bird: The next item under Unfinished Business is the motion by Dr. Tarumianz that there be appointed a committee to investigate feeblemindedness in this state.

Dr. Tarumianz: I move that the Society authorize the President to appoint a special committee to survey the problems of the mentally defective in the state and to study conditions in the Delaware Colony; what services they have, what improvements can be made from the medical viewpoint since this is primarily a medical problem and since the Medical Society is very much concerned in it. That is my motion.

President Wagner: You feel that a special committee would be necessary?

Dr. Tarumianz: I would say composed of members from all three counties, well qualified individuals who are interested in this particular field of medicine.

President Wagner: You have heard the motion. Is there a second?

The motion was seconded and carried.

Dr. Bird: Your Committee on Diabetes in their report further suggests that the details of this circularization should be handled by each County Society and asks the House of Delegates whether it feels that the State Society or the County Societies should be responsible for the moderate expense involved. They want circularization sent to all physicians in the state.

I don't happen to have such a list. We get them each year from the Tax Department though. I haven't yet received this year's list, but I have, of course, a list of the members of our Society. However, there are still, as you know, physicians in this state who do not belong. If that is the case, the logical thing would be for the county societies to take it up, because they can go to the clerk of each county.

Dr. Mayerberg: If they want these particular circulars to reach the members of the Society, that had better be done through the Secretary, because the New Castle Society of course will receive them, but your Sussex members won't. I say that because the Sussex County Society won't answer correspondence. They won't answer a letter from a committee member or a letter from the President or Secretary.

We have the money in the treasury. If this is so important that it reach every physician in the state, I recommend the Executive Secretary take on that job.

The motion was seconded, and carried.

Dr. Bird: The second question was that of the expense. I feel the State Society should pay the expense.

President Wagner: Will somebody make a motion that the State Society pay the expense?

The motion was made, seconded, and carried.

Dr. Bird: That, Mr. President, is the end of the Unfinished Business.

President Wagner: Is there any other Unfinished Business? If not, we will proceed with the election of officers, and the Committee on Nominations will make their report. Dr. King.

Report of the Committee on Nominations for 1952

Vice-President: John B. Baker, Milford.
Secretary: Andrew M. Gehret, Wilmington.
Treasurer: Joseph M. Messick, Wilmington.
Del. to A. M. A.: L. L. Fitchett, Milford.
Alt. to A. M. A.: H. T. McGuire, New Castle.
Rep. to D. A. M.: W. O. LaMotte, Sr., Wilmington.

Standing Committees

Scientific Work: Benjamin F. Burton, Dover; James Beebe, Jr., Lewes; Andrew M. Gehret, Wilmington.

Medical Education: Alfred R. Shands, Jr., Wilmington; Robert S. Long, Frankford; Robert R. Layton, Dover.

Publication: W. E. Bird, Wilmington; M. A. Tarumianz, Wilmington; Andrew M. Gehret, Wilmington.

Public Laws: Joseph S. McDaniel, Dover; F. L. Fox, Seaford; Emil Mayerberg, Wilmington; Jerome D. Niles, Middletown; Victor D. Washburn, Wilmington.

Budget: Joseph M. Messick, Wilmington; Charles Levy, Wilmington; M. A. Tarumianz, Wilmington; W. T. Chipman, Harrington; Charles M. Moyer, Laurel.

State Board Medical Examiners: W. E. Bird, Wilmington; Joseph S. McDaniel, Dover; C. L. Munson, Wilmington; Lawrence L. Fitchett, Milford; Douglas M. Gay, Wilmington; Roger W. Murray, Wilmington; Leslie M. Dobson, Milford; G. M. Van Valkenburgh, Georgetown; Sylvester W. Rennie, Wilmington; W. W. Lattomus, Wilmington.

Terms expiring March 1, 1952: W. E. Bird and J. S. McDaniel.

Respectfully submitted,
Allen D. King, *Chairman*

President Wagner: You have heard the Report of the Nominating Committee. Are there any other nominations?

If not, will someone make a motion that the nominations be closed and that the Secretary be authorized to cast the ballot?

Dr. Tarumianz: May I just ask a question of the Nominating Committee? Is there any reason why our present President has not been considered as a well-qualified man to assume the responsibilities of Delegate to the A. M. A.? On what basis have they not considered that? Did you refuse to serve? It is the opinion of all that I know that you should represent us.

President Wagner: Thank you, very much, but I have been approached on that and feel highly complimented and was asked to continue as a Delegate, but I have served a number of times and feel it would be advisable now to make a change, and therefore feel very grateful to the Committee for making the nominations they have.

Dr. Tarumianz: I move the nominations be closed and the Secretary be instructed to cast a ballot for those named.

The motion was seconded and carried, the Secretary casting the necessary ballot for the election of those named by the Nominating Committee.

New Business

Dr. Bird: Under New Business, Mr. President, those that get the A.M.A.'s Washington Bulletin have received word that Senate Bill 377 has been recommitted. Now Dr. Lawrence sends this telegram to me advising that the Medical Education Bill was defeated in the Senate yesterday. Getting this only yesterday and knowing the House would meet tonight, I think it would be more impressive were we able to say that the House of Delegates of this State Society thanks him for his services in behalf of this proposition.

Dr. Prickett: I so move.

Dr. Pennington: I second the motion but would suggest sending a telegram to that effect.

Dr. Bird: O. K., it will be put on the top of the agenda, right here, and sent in the morning.

President Wagner: Is there any other New Business?

Dr. Bird: Here is a resolution concerning Veterans' affairs. See if they want to take any action on that.

Dr. Gehret read letter from the Arkansas Medical Society, with accompanying resolution.

Dr. Gehret: Apparently, the Veterans Hospital in Arkansas was taking in patients and accepting money from the Blue Cross and insurance companies.

Dr. Mayerberg: Do we have that situation here, Mr. President? Are we faced with that situation in this state?

Dr. Tarumianz: This is apparently a preventive measure. They have it; we do not.

Dr. Mayerberg: I don't think we dare to adopt anything like that until the situation should come up. I move that the communication be tabled.

The motion was seconded and carried.

President Wagner: There is a communication here from Dr. Elmer L. Henderson, President of the American Medical Education Foundation, urging us to support that Foundation. Do you wish to take any action upon this communication?

Dr. Chipman: I move it be turned over to the Councilors. They can take care of it.

The motion was seconded and carried.

President Wagner: We have a communication from R. R. Griffith, Chairman of the Maryland-District of Columbia-Delaware Hospital Association, asking that we endorse a plan to make Delaware one of the pilot states for a study on the financing of hospital care by a commission of the A. H. A. What action do you wish to take on that communication?

Motion to approve was seconded and carried.

President Wagner: I would like to pause for a moment while we stand in memory of those who have passed away within the past year. Will you please rise in a moment of silent tribute?

The House arose in a moment of silent tribute.

Miscellaneous

President Wagner: The matter of appropriations?

Dr. Bird: That is perfunctory, now that we have approved the budget.

President Wagner: Approval of the Scientific Program?

Dr. W. O. LaMotte, Sr.: I move the approval of the Scientific Program. And then could I bring something before the attention of the House?

You all know that after the luncheon on Wednesday, there is always a great deal of excitement. I remember when we elected a President at one of the meetings there were three to elect him. In fact, that happened last year, also. One of the speakers from Philadelphia brought down his slides and he could not show them because the lights went out of the projector and I think I am right in stating that only one officer was present. I discussed a paper on glaucoma, but for some reason or other it didn't appear. Something happened to it. I don't know what. But there were not very many there. Now, that is unfair to the speaker and I think that it is a reflection on the Medical Society, and I just wondered what the delegates here think about dropping Wednesday afternoon sessions.

Now the Medico-Chirurgical Society of Maryland, with its two great medical schools only has one day. I am in favor of going over on Wednesday to the Wednesday luncheon, but after our folks get their luncheon there is not much of a representation left. They go home.

And I believe that some things might be improved upon on Tuesday morning. For many years we have had somebody to deliver an address of welcome. I myself am not particularly interested in it, whoever it is. I don't think it should be required, and we could make use of that time.

So, in order to get it before you gentlemen, I move we have our sessions to end on Wednesday at luncheon time.

President Wagner: It has been moved the sessions of the Medical Society of Delaware be concluded with the luncheon on Wednesday. That would be a day and a half of clinical sessions. Is there a second to the motion?

The motion was seconded.

President Wagner: Is there any discussion?

Dr. M. A. Tarumianz: I hate to disagree with my friend, Dr. LaMotte, but I believe it might be quite appropriate for the years when we meet down-state. I don't think it is fair for our Society, which is growing so fast, to go backward. Pretty soon we will have only one day. I am fearful we will not have enough material for our medical journal. We have to consider that very seriously. As it is, we are handicapped for want of scientific papers. So I would caution the Society not to consider that for the convention in New Castle County.

Dr. Bird: I might add, not in discussion but as merely a statement of fact, that Maryland has a one-day session as a rule, but they have two sessions a year, so that they do get in at least two full days of very excellent programs.

Dr. LaMotte: How many members in the State Society do they have?

Dr. Bird: About 1600.

Dr. LaMotte: They have the two great medical schools.

Dr. Bird: That is right.

President Wagner: Is there any further discussion?

Dr. Tarumianz: I suggest that Dr. LaMotte change his motion and make that on alternating years when we meet downstate. Remember you have a large membership in this county. I don't think I have ever seen an afternoon here on the second day not having enough people. It is always down-state when we don't have enough people to attend the meetings. Maybe I am wrong. I am merely expressing my opinion from experience.

Dr. Stambaugh: I think Dr. LaMotte was speaking of the meeting up here.

President Wagner: I thought he had in mind the meeting in Dover.

Dr. LaMotte: That was down-state, somewhere, where there was only two present to elect the President. We used to elect the President the last thing on Wednesday, after lunch. I think we probably will have more here tomorrow afternoon when we meet here. I don't know.

Dr. Tarumianz: My point is that you have here a larger number of members in comparison with down-state. It is a matter of relativity. I mean, if you would change your motion as I suggested, I would be heartily in favor of it. But the meeting in New Castle County I think at least we should have two days' sessions.

Dr. LaMotte: Maybe that is a good point.

Dr. Tarumianz: On Wednesday afternoon we have excellent papers.

Dr. W. M. Pierson: Do you have a record of attendance of the Wednesday afternoon sessions for the last five years?

Dr. Bird: No. I only know the meeting in Wilmington in 1949 attracted 50% of the membership of the State Society. Last year, at Dover, it was 37%, and two years before that, at Rehobeth, it was 25%. That means that approximately one-third of our membership will show up at a two-day meeting down-state; one-half or better will show up when it is here.

Dr. LaMotte: That is the number that registered. We have a big registration, but they don't stay very long.

Dr. Mayerberg: Is it necessary to have our sessions limited by law, or under the By-Laws? Can't your sessions be set each year by the Program Committee according to the number of papers you have and according to the county where the meeting is to be held? Don't have a law that you can't go beyond 12:30 Wednesday.

PRESIDENT WAGNER: The point is very well taken.

DR. MAYERBERG: And while you speak of attendance, may I urge every single person to be present tomorrow morning at 9:30? It is terribly embarrassing to the President and the officers of the Society to appear there and the preacher there to give the invocation and the Mayor to address us, and only have a few present. Let's show a little more pride, if you only stay an hour. But for heaven's sake let's have somebody there when the session starts tomorrow morning at 9:30.

PRESIDENT WAGNER: I think you are quite right about that, and I like your comment about the attendance, but I feel as you brought out, there is nothing in the By-Laws as to the length of the meeting we should have, and that it should be left to the discretion of the Program Committee.

Is there any other discussion on Dr. LaMotte's motion that the meeting be concluded with the luncheon on Wednesday?

DR. LAMOTTE: On alternating years.

PRESIDENT WAGNER: Alternating years.

DR. J. C. PIERSON: I would like to ask if it is practicable, before this decision is made — which I think is pretty important, involving as Dr. Mayerberg points out some indication of progress—as to whether we meet a day and a half or two days — whether it would be practical to defer any change in policy until figures could be accumulated perhaps in a year or two years, instead of taking total registrations only, but that records at various sessions be kept so that we know whether in Dover, Wilmington and Rehoboth the attendances warrant having this afternoon session. It also might supply some interesting data as to what types of papers are well-received in terms of attendance at such sessions.

DR. G. W. VAUGHAN: Another thought occurs to me. Some time back in his report Dr. Bird emphasized the fact that our exhibits are growing bigger and more profitable, and the question arises if you cut the time will your exhibitors be interested. And, after all, these out of town dignitaries who come down to read a paper — it is always published in the Journal. They get the credit for it, and it would be better for them to have a little embarrassment by having a slim crowd than to have our budget reduced by the diminution of the exhibitors.

PRESIDENT WAGNER: Is there any other discussion on the motion?

DR. TARUMIANZ: May we ask Dr. LaMotte to withdraw his motion in favor of the motion of Dr. Mayerberg to leave that to the discretion of the Committee on Program?

PRESIDENT WAGNER: Would you be willing to do that?

DR. LAMOTTE: I just wanted to get the sentiment of the House of Delegates, whether it would be their sentiment that in case there was not apt to be good attendance and everybody would leave, that that part of the program be eliminated for that particular year. But leave it up to the Program Committee.

PRESIDENT WAGNER: Would you be willing to withdraw your motion for further observation on the matter of attendance in successive years?

DR. LAMOTTE: I would like to make the motion that I have just indicated, that it is the sentiment of this Society not to have afternoon sessions, but that it is up to the Program Committee to decide. I just wanted to get the sentiment here. I have had people come to me and talk about it.

PRESIDENT WAGNER: You made the original motion.

DR. LAMOTTE: I will withdraw that motion.

DR. BIRD: Then the motion now is that it be declared the sentiment of this House that . . .

DR. LAMOTTE: No.

DR. BIRD: You withdraw "the sentiment of the House"?

DR. LAMOTTE: It is the sentiment of the House —but the Program Committee shall always bear that in mind, so that when we meet down the state and everybody is apt to leave, we will not have that happen. There wasn't anybody around there to do anything last year. We couldn't get anything done. We didn't have any help. Now, I'll tell you, when the Secretary is not there, being as he is the motor as you might say of any organization, when the Secretary is not there, things just peter out. We have two secretaries now, but nobody was there.

DR. BIRD: I happened to be there, but I was busy with the exhibits. I didn't leave till nearly 7 o'clock.

DR. TARUMIANZ: I would also like to find out the sentiment of this House as to whether the President and the Nominating Committee should not consider very seriously the appointment of members to the various committees. I don't think any person who is not willing to work should be considered for any committee. I don't think a committee is for the purpose of honoring individuals; it is for the purpose of accomplishing something.

This is no criticism, it is simply an analysis based on past experience, and it is my experience that every President and Nominating Committee are guilty if they don't remove dead wood from any committee work. That is simply again to find out the sentiment of this House of Delegates.

PRESIDENT WAGNER: Your point is well taken, but you are not speaking to the point of the motion.

DR. TARUMIANZ: No.

PRESIDENT WAGNER: Therefore, we will call for a vote on the motion of Dr. LaMotte. The first motion was withdrawn. Dr. King seconds the second motion, that the matter of the length of the program be left up to the Program Committee, bearing in mind that there is usually a very small attendance on the second afternoon when the meetings are held down-state.

A voice vote was taken. Because of division a rising vote was then taken, the count revealing 16 votes for the motion — no votes in opposition, but some not voting.

The motion was therefore carried.

PRESIDENT WAGNER: Dr. Tarumianz, of course I am sure your point about committee work was well chosen. It is a problem for every President. You have been all through it, and many others in the future will go through the same problem.

All right, the selection of the Meeting Place.

DR. E. L. STAMBAUGH: I am glad Dr. LaMotte came to our defense down state. I think we need a shot in the arm.

I would like to suggest Rehoboth as the meeting place for the 1952 meeting, and the time in September.

The Sussex County Medical Society is a whole lot stronger than our representation tonight indicates, and we usually come up with a good meeting, and I am sure we will in 1952.

President Wagner: The question has been raised as to why September instead of October. I recall it usually gets pretty cold in October and the hotel facilities are not available, and therefore September is the proper time to have it when held in Rehoboth.

You make that as a motion that the meeting be held in Rehoboth in September, next year?

Dr. Stambaugh: Yes, Mr. President.

The motion was seconded and carried.

President Wagner: Thank you, very much, for the invitation, Dr. Stambaugh.

Now, is there any miscellaneous business? Any comments? Any announcements?

Announcement as to automobile parking facilities and regulations.

President Wagner: Thank you, very much, for making those arrangements, Dr. Bird.

On motion duly seconded and carried the meeting then adjourned at 11:00 p.m.

"I'm a Doctor—and I'm Human"

A plea to the American public that emergency calls to doctors be based on actual emergencies is made by Dr. Robert K. Webster, a general practitioner in Brazil, Indiana, in the November 17th issue of the **Saturday Evening Post.** In an article entitled "I'm a Doctor—and I'm Human," he relates that except for obstetrical and accident cases, nine of every ten calls are not emergencies.

"I would say it is an emergency if there is acute pain; bleeding that will not stop; any interference with breathing, as in strangulation or suffocation; any sudden unconsciousness without quick recovery; or any signs of shock such as extreme weakness, pallor and much perspiring following an injury, pain or collapse," he explains.

The doctor says an ordinary fainting spell is not an emergency. The patient recovers consciousness within a few minutes. Vomiting is not an emergency in itself, and neither is fever, the onset of which customarily takes several hours. "Most people, though, want us to come right away when they discover the patient has a high temperature," he adds.

Dr. Webster asks that people understand that the most valuable thing a doctor has to give the sick is time. Unfortunately, a doctor's time is limited, even when he puts in 70-80 hours at work each week, as Webster does.

His own pet peeves are the minority who demand immediate attention for three-day-old "emergencies", those who call the doctor simply because it's too wet to go out themselves, and those who call his home, insist on speaking to the doctor, only to ask what time he will be at his office.

He also wants to dispel the notion that docotors are superhuman, able to keep on the go, never get tired, and don't mind missing a meal. The fact that an excessive number of doctors succumb while fairly young is cited as evidence that physicians are prone to such occupational diseases as hypertension, coronary thrombosis, arteriosclerosis, and diabetes.

Dr. Webster says he doesn't want his griping to be misunderstood. He wouldn't trade jobs with anybody. All he wants is greater public cooperation and understanding of a physician's problems.

CAPITOL CLINIC

December 11, 1951

VA Redefines Rules

Veterans Administration regulations, revised to conform with new laws, also redefine procedures for recovering medical care costs from insurance companies and for the first time set a dollar-and-cents standard for determining when a veteran has "no adequate means of support." The new regulations, printed in the Federal Register of November 30, include:

1. When a non-service connected case applies for free domiciliary (not hospital) care, claiming "no adequate means of support," an income of $125 per month is the cutoff point for a man with no dependents. If income is under that, he is eligible; if above, he is not. However, if the patient is contributing in whole or in part to the support of a wife, child, mother or father, the $125 limitation does not apply.

Rules governing non-service connected admissions to VA hospitals remain virtually unchanged. The veteran still must affirm he is unable to pay for hospitalization, and VA still may not investigate beyond the statement.

2. VA reaffirms its intention to recover money from obligated third parties for medical care rendered to veterans. This long-standing policy has been enforced with varying success. It is aimed at collecting from health and hospital insurance companies, from union welfare funds, from public and private compensation funds, from legally liable persons (as in accident cases) and from other federal departments.

On this point, the regulation states that veterans "who it is believed may be entitled to hospital care or medical or surgical treatment or reimbursement for all or part of the cost, by reason of statutory, contracted or other relationships with third parties . . . will not be furnished hospital treatment without charge . . . to the extent of the amount for which third parties are liable."

The regulations explain in detail how hospital administrators are to proceed to make collections from such third parties.

Holger Nielsen Artificial Respiration

On recommendation of National Research Council, the Holger-Nielsen push-pull method of artificial respiration has been adopted nationally and will supplant the Schafer prone-pressure method as soon as personnel can be taught the new system. Defense Department said the Holger Nielsen system, for years the standard method in Norway and Denmark, has been approved by virtually every national organization active in first aid work. Among them are the armed forces, American National Red Cross, U. S. Public Health Service, Federal Civil Defense Administration, Boy and Girl Scouts and American Medical Association's Council on Physical Medicine and Rehabilitation.

Experiments preceding selection of the system were carried on at Universities of Pennsylvania and Illinois, Springfield (Mass.) College and Harvard University. Experiments were performed on animals, on sick and injured patients who had stopped breathing, on human volunteers holding their breath, on freshly deceased cadavers and on volunteers whose breathing ability had been paralyzed for short periods of time by use of drugs. Reports on these experiments, and other studies and investigations, convinced National Research Council that the Nielsen method is to be preferred to all others as standard procedure in most cases. An important finding was that the Nielsen method exchanges about twice as much air as the Schafer method, up to now the standard artificial respiration technique with most organizations.

Under the Nielsen method the patient is placed face down, with either cheek resting on his crossed hands. The rescuer, kneeling at the patient's head, exerts pressure downward on the chest, then draws the arms forward to assist the patient's own "elastic recoil." With the Schafer method, the operator is not able to assist in the recoil. On this, Defense Department said, "When a victim is deeply asphyxiated and near death, there is a loss of natural muscle tone, less elasticity of the chest and less tendency for air to be sucked in. This makes the Schafer method least effective when most needed." Under special circumstances (arm injuries or when an individual cannot be placed on his stomach) other methods are recommended.

Ewing Reiterates Stand

Addressing the 31 Negro Civic Associations in Washington, FSA Administrator Oscar Ewing reiterated his support for national compulsory health insurance and for federal aid to medical education. Then he declared ". . . I believe there are people in this country who do not care whether we have enough doctors to go around—who do not want to see any serious steps taken to relieve the shortage of doctors. I believe there are people in this country who do not understand, and do not want to understand, the crying problem of the cost of medical care . . . The threat to the liberal American idea lies in a refusal to recognize what this can mean in the way of privation, of financial disaster, and even of lives lost . . . there is a threat to our very survival in the refusal to recognize that these problems exist—or, worse yet, in recognition without any desire to find a solution." However, he said, "I think we should always treat counter-proposals with the greatest of respect and consider them very seriously."

BOOK REVIEW

Review of Physiological Chemistry. By Harold A. Harper, Ph.D., Third edition. Pp. 260. Paper. Price, $2.00. Palo Alto, California: University Publishers, 1951.

This loose leaf book presents the fundamentals of physiological chemistry with emphasis on the accepted facts and concepts of the subject. The chemistry and formulas of all the body nutrients, minerals, vitamins, enzymes, hormones, fluids, and tissues and their relation to the metabolism of the body, are discussed. The chemistry of respiration will be found especially enlightening.

A detailed table of contents and index together with many well-tabulated and informative charts and tables are given which are a ready reference to the physician, the laboratory worker, and the biochemist.

This manual should serve as a valuable review text to those who are interested in the latest thinking in the basic sciences.

+ Editorials +

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.

W. Edwin Bird, M. D. .... Editor
822 North American Building

Andrew M. Gehret, M.D. .... Associate Editor
1007 Park Place

M. A. Tarumianz, M. D. ....Assoc. & Managing Editor
Farnhurst, Del.

Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. The Journal, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

The right is reserved to reject material submitted for publication. The Journal is not responsible for views expressed in any article signed by the author.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the A. M. A. Advertising forms close the 25th of the preceding month.

Matter appearing in The Journal is covered by copyright. As a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given. The reproduction in whole or in part, for commercial purposes, of articles appearing in The Journal will not be permitted.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 21 December, 1951 No. 12

YEAR-END HEADACHES

The year 1951 draws near to its close with turbulence, truculence, testiness and tempers, so far as relates to two of Delaware's state-maintained institutions, the Delaware Colony for the Feebleminded at Stockley and the Brandywine-Edgewood Sanatorium at Marshallton. Public interest in both institutions was renewed by a similar chain of events: (1) The dismissal of the then superintendent; (2) The retort of the ex-superintendent or his friends; and (3) criticism of the controlling or managing board. Columns and columns have appeared in the daily press, together with radio comment in considerable quantities, which stresses the very keen interest the public takes in the recent events at both institutions. The best index of how vital the public regards any situation is the number and character of the editorials that appear in our daily press.

As typical, concerning Stockley, the *Wilmington Journal-Every Evening* for November 11, 1951, says editorially:

> **An Appraisal Is Timely**
>
> In setting about a full-scale survey of the Delaware Colony for the Feebleminded at Stockley, Sussex, the Medical Society of Delaware deserves the heartiest encouragement. The state's doctors could hardly ignore the grave doubts recently cast upon the institution as a place meeting modern standards. The society could have been lazy and merely called for an investigation by the Governor or a legislative committee. Instead it has determined to throw itself into a task it feels it can and should do.
>
> Regardless of the replacement of Howard T. Ennis as superintendent, the public has a right to know how Stockley compares to similar plants in other states. It is in a spirit of simple fact-finding that the society's committee of five doctors plans to go to work. The calibre of the committee appointed by Dr. Charles E. Wagner, president, is proof enough that no whitewashing or hanging has been done in advance.
>
> Dr. Tarumianz, with a national reputation for good public psychiatry, is willing to take on the burden and responsibility of being chairman. As the state-employed head of the services at Farnhurst and Delaware City he may well feel he had no option but to accept. Of the other four respected physicians, Dr. Albert L. Ingram, Jr., of Wilmington, specializes in neuropsychiatry; while Dr. Edward T. O'Donnell of Wilmington and Dr. Arnold H. Williams of Laurel specialize in pediatrics, which is also a special interest of Dr. John B. Baker in his general practice at Dover.
>
> Dr. Tarumianz suggests it may be necessary to call in some out-of-state consultants in the field of public institutions for the feebleminded. The reports of such doctors will be essential, we believe, to enable the committee to put Stockley in perspective for all of us to see. To pay the fees of such experts and meet other expenses some money will have to be found. The sum will doubtless not be great. It is the kind of expenditure, we'd say, which can very appropriately be met out of the Governor's emergency fund.

Concerning Brandywine, the *Wilmington Morning News* for December 3, 1951 remarks editorially:

> **What Goes On Here?**
>
> The public may ask with considerable justification, "Just what's going on in the Brandywine and Edgewood sanatoria?"
>
> The disturbing events of the last few days war-

> rant the question. The State Board of Health should give the public a straight answer.
>
> Dr. Lawrence D. Phillips, former superintendent and clinical director, recently resigned. His last day was supposed to have been Thursday of last week. He remained a day longer — for the sake of the patients.
>
> On Saturday, a dozen out-patients showed up at Brandywine for treatments. There was no physician on duty to treat them. Dr. Charles Gill, superintendent of both Brandywine and Edgewood, said he thought Dr. Phillips had arranged for some one to be on hand.
>
> Why should that have been the responsibility of a man who was leaving? Why wasn't that the responsibility of the superintendent?
>
> Then yesterday came a mysterious story about the alleged oversupply of narcotics at the sanatoria. Dr. Gill told how he had opened cabinets where the narcotics were kept and for which Dr. Phillips was responsible. The narcotics were impounded — without Dr. Phillips' knowledge — on Nov. 21, about a week before Dr. Phillips was due to leave.
>
> Dr. Gill then called upon the federal narcotics agents to investigate the handling of narcotics at the sanatoria. What are the implications? What are Dr. Gill and the State Board of Health trying to say?
>
> Dr. Gill has been superintendent of the sanatoria since last September. Does it take that long for a superintendent to begin checking on narcotics in the sanatoria?
>
> No wonder the public is puzzled and mystified. What is going on at the sanatoria? A clear and comprehensive answer is needed, regardless of where the chips fall.

Such editorials point up the fact that, as of now, the public of this state is fully aroused over the developments at these two public plants within the past six months. Something or somebody is wrong at both places, but this JOURNAL, and the Society is represents, being strictly neutral and holding no brief for or against any person or place, points out that name-calling and the exchange of unpleasant personalities, such as occasioned the editorial in the *Journal-Every Evening* of December 11th will settle nothing, and is, in fact, beneath the dignity of a profession dedicated to the best possible service of the sick, which after all is the main concern of profession and public alike.

The diagnosis of what is wrong at both places will surely be made, in due season, and the proper therapy then prescribed. The public is going to insist on this being done. Till that happy day arrives it behooves us to avoid carping criticism, but to suggest the kind of constructive action that will be in keeping with the best traditions of the medical profession.

CORRECTION

In our November editorial, page 349, two quotes were printed in small type: Governor Warren's ending with the words "interested in the problem," and President Cline's beginning with the words "As you undoubtedly know." These two quotes should have been separated by the first five lines of larger type text on page 350, beginning with the words "In reply to Warren's statement." Sorry!

MILESTONE NO. 36

With this issue of THE JOURNAL your humble scribe completes his thirty-sixth year as editor of a state medical journal. With the retirement last June of Dr. Clarence A. Smith, editor for fifty years of *Northwest Medicine*, the Delaware editor now becomes the senior editor in the state medical journal group. While there have been some heartaches and a few more headches in these thirty-six years, the task is one we have, on the whole, enjoyed, thanks to the help and cooperation of our members and our friends. May it continue, and thanks in advance.

THE JOURNAL extends to all our members, friends, readers, and advertisers, the Very Best Wishes for a

MERRY CHRISTMAS

and a

HAPPY NEW YEAR

DELAWARE STATE MEDICAL JOURNAL

VOLUME 23—1951 INDEX TO TITLES AND AUTHORS

Abbiss, J. W.: Bronchial Adenoma 308

Achalasia, Intractable, Esophagocardiomyotomy for [Herbert R. Hawthorne and H. Clinton Davis] 32

Achalasia Treated by Transabdominal Esophagogastrostomy [Harold S. Rafal and J. Jesse Selinkoff] 27

Ackerman, Joseph L. and Bohan, Edward M.: Post-Prandial Blood Sugar 122

Adelman, Samuel I: Radio- Therapy of Benign Lesions Commonly Seen in General Practice 67

Adenoma, Bronchial [J. W. Abbiss] 308

Ageing, Biology of [Edward A. Bortz] 112

Alcoholism [William A. Byrne] 233

Antibiotic Therapy, Present Status of [David A. Cooper] 105

Anxiety States, Diagnosis and Treatment [Joseph Hughes] 197

Arikian, N. T.: Necessity of Individualization in Insulin-Coma Therapy 243

Auto-Fellatio [Jerome Kay] 218

Balance, Maintaining [A. W. Gottschall] 222

Baum, O. Eugene: Adolescent Behavior Problem in a Girl 235

Beatty, Gerald A. and Frelick, Robert W.: Spontaneous Hemopneumothorax 93

Behavior Problem in a Girl Adolescent [O. Eugene Baum] 235

Bleeding and Coagulation Studies, Application of [Anne Dunbar Richman and William J. Hoopes] 167

Blood Sugar, Post-prandial [Joseph L. Ackerman and Edward M. Bohan] 122

Boines, George J.: Artificial Triceps Action 357

Boines, George J.: Tracheotomy in Poliomyelitis 345

Boines, George J.: Use of Dimethylyn in the Management of Certain Symptoms of Menopause 41

Boines, George J. and Horoschak, Steven: Dimethylane in the Treatment of Dysmenorrhea 183

Bortz, Edward A.: Biology of Ageing .. 112

Byrne, William A.: Alcoholism 233

Cachexia Pituitary (Simmond's Disease) [Donald E. Kayhoe, Anne Dunbar Richman and Park W. Huntington] .. 177

Campana, George F. and Bandy, William H.: Cancer Program of the State Board of Health 270

Cancer Program of State Board of Health [George F. Campana and William H. Bandy] 270

Canki, Tatjana Thaller: Two Cases of Juvenile Schizophrenia 240

Children's Services, Crippled [Jack Sablof] 276

Clagett, Jr., A. Henry: Recent Advances in Diagnosis of Coronary Artery Disease 67

Colitis, Ulcerative, Surgical Treatment of [L. Kraeer Ferguson] 297

Consultation, Psychiatric, in General Hospital [Sanford G. Rogg] 339

Cooper, David A.: Present Status of Antibiotic Therapy 105

Coronary Artery Disease [William D. Stroud] 137

Coronary Artery Disease, Recent Advances in Diagnosis of [A. Henry Claggett, Jr.] 67

Cortisone and ACTH in Treatment of Diseases of the Eye [Robert L. Dickey] 11

Cretinism, Pituitary [Charles William Dunn] 207

Davenport, Mary T.: Nutrition in Quantity Food Service 282

De Cherney, H. George: Contraindications for Electric Shock Treatment, The Need for Re-evaluation 226

Defense, Civilian, Medical Aspects of [Edward F. Gliwa] 264

Defense, Program, Civil, Nursing Participation [Mary M. Klaes] 265

Effects of Deficiency of 17-Ketosteroid and Male Hormone Therapy in Rheumatic Fever and Arthritis [Charles William Dunn] ... 36

Depression, Reactive: Case Report [Hal W. Geyer] ... 355

Dermatitis, Contact [Allen D. King] ... 173

Diabetes, Office Management of [Perry S. MacNeal] ... 323

Dickey, Robert L.: Cortisone and ACTH in Treatment of Diseases of the Eye .. 11

Dimethylane in Treatment of Dysmenorrhea [George J. Boines and Steven Horoschak] ... 183

Dimethylyn, Use of in Management of Certain Symptoms of Menopause [George J. Boines] ... 41

Doctor, Referring, A Challenge to [Marjorie Hubbard] ... 248

Dougherty, Charles J.: Mesenteric Vascular Occlusion ... 125

Dunn, Charles William: Pituitary Cretinism ... 207

Dunn, Charles William: Effects of 17-Ketosteroid Deficiency in Rheumatic Fever and Arthritis ... 36

Electric Shock Treatment, Contraindications for [H. George DeCherney] ... 226

Emergencies, Neuropsychiatric [Joseph C. Yaskin] ... 202

Endocrinology in Gynecological Practice [Richard C. Hayden] ... 342

Epilepsy and Convulsive Disorders [Joseph Hughes et al.] ... 211

Epilepsy, Case of [Roy E. Reed] ... 227

Evans, G. Taggart: Tuberculosis Today 347

Evisceration, Pelvic [Harold S. Rafal] . 310

Fat in a Weight Reducing Diet, Use of [Alfred W. Pennington] ... 79

Fechner, Julius: Sodium Amytal Addiction With an Acute Toxic Psychosis 231

Ferguson, L. Kraeer: Surgical Treatment of Ulcerative Colitis ... 297

Fitchett, Lawrence L.: Acute Toxemia of Pregnancy ... 353

Fluoridation of Public Water Supplies [Margaret A. Jeffreys and Donald K. Harmeson] ... 274

Food Service, Quantity, Nutrition in [Mary T. Davenport] ... 282

Freyhan, F. A.: Study of a Schizophrenic Family ... 213

Funk, Vance A.: Melanoma of the Iris 59

Furlong, John H., Jr.: Heminephrectomy for Staghorn Calculus in Lower Half of Double Kidney ... 57

Geyer, Hal W.: Reactive Depression, Case Report ... 355

Gilmore, Marian L.: One Phase of Correlation Between Pediatrics and the Speech and Hearing Services ... 279

Glaucoma, Present Concept [Alvin W. Howland] ... 180

Gliwa, Edward F.: Medical Aspects of Civilian Defense ... 264

Goitre, Nodular, With Bilateral Malignant Adenomata [Edwin A. Mekanik and Davis A. Baltz] ... 314

Gottschall, A. W.: Maintaining Balance 222

Green, Charles R.: Intestinal Obstruction ... 14

Harkins, Francis A. and Colfer, Richard J.: Diagnostic Importance of Liver Biopsy ... 53

Hawthorne, Herbert R. and Davis, H. Clinton: Esophagocardiomyotomy for Intractable Achalasia ... 27

Hayden, Richard C.: Endocrinology in Gynecological Practice ... 342

Head Injuries, Acute, Management of .. 42

Hemochromatosis [James Ripepi, George W. Martin, Jr., and Park W. Huntington, Jr.] ... 16

Hemopneumothorax, Spontaneous [Gerald A. Beatty and Robert N. Frelich] 93

Hepatoma, Primary [Allan Iddles] ... 99

Hospital Survey and Construction Program in Delaware [C. P. Knight] ... 266

Howland, Alvin W.: Glaucoma — Its Present Concept ... 180

Howard, Harry S.: Surgical Intervention in Combined Physical Sterility and Psychic Impotence ... 217

Hubbard, Marjorie: Challenge to You, the Referring Doctor ... 248

Hudson, Floyd I.: Mortality Registration Problems 263

Hughes, Joseph: Diagnosis and Treatment of Anxiety States 197

Hughes, Joseph et al.,: Epilepsy and Convulsive Disorders as Seen in the Seizure Unit of the Governor Bacon Health Center 211

Huntington, Jr., Park W.: Hemolytic Anemia in Infectious Mononucleosis .. 165

Huntington, Park W. and Dunbar, Anne C.: Testicular Tumors 1

Hynes, John F.: Cancer of the Laryngopharynx 86

Iddles, Alan: Primary Hepatoma 99

Idiot-Savant? [Joseph Jastak] 244

Ileus, Gallstone [John C. Pierson and Edwin A. Mekanik] 304

Impressions After 33 Years in Medical Practice [Charles E. Wagner] 295

Infarction, Acute Myocardial, Anticoagulant Therapy in [Joseph B. Vander Veer] 145

Infarction, Myocardial Acute, Rehabilitation Following [William G. Leaman, Jr.] 154

Insulin Coma Therapy, Necessity of Individualization in [N. T. Arikian] 243

Iris, Melanoma of [Vance A. Funk] 59

Jastak, Joseph: An Idiot-Savant? 244

Jeffreys, Margaret H. and Harmeson, Donald K.: Fluoridation of Public Water Supplies 274

Kaplovsky, A. Joel: Stream Morbidity Report 273

Katzenstein, Lawrence: Common Virus Diseases of the Skin 175

Kay, Jerome: Auto-Fellatio 218

Kidney, Double, Heminephrectomy for Staghorn Calulus in Lower Half [John H. Furlong, Jr.] 57

King, Allen D.: Contact Dermatitis ... 173

Klaes, Mary M.: Nursing Participation in Delaware's Civil Defense Program 265

Knight, C. P.: Hospital Survey and Construction Program in Delaware 266

Kowalski, Louis J.: Mental Hygiene and a Continuous State of Cold War 224

Laryngopharynx, Cancer of [John F. Hynes] 86

Leaman, William G.: Rehabilitation Following Acute Myocardial Infarction 154

Liver Biopsy, Diagnostic Importance of [Francis A. Harkins and Richard J. Colfer] 53

Loomis, Earl A., Jr.: Psychotherapy Conferences at Governor Bacon Health Center 212

MacNeal, Perry S.: Office Management of Diabetes 323

Madry, Hazel Browne: Social Worker in Group Therapy 251

Marshall, Cecil A.: We Live Longer .. 272

Mekanik, Edwin A. and Baltz, Davis A.: Nodular Goiter With Bilateral Malignant Adenomata 314

Mental Hygiene, Need for [Calvin Settlage] 228

Mediastinal Lesion [Paul A. Shaw] 97

Med. Soc. of Del., Proceedings, 1951 358

Med. Soc. of Del., Transactions, 1951 ... 361

Meig's Syndrome [Isadore Slovin and James Nealon] 8

Mental Hygiene and a Continuous State of Cold War [Louis J. Kowalski] 224

Mononucleosis, Infectious, Hemolytic Anemia in [Park W. Huntington, Jr.] 165

Mortality Registration Problems [Floyd I. Hudson] 263

Myerson, Ralph M.: Porphyria 62

Obstruction, Intestinal [Charles R. Green] 14

Occlusion, Vascular, Mesenteric [Charles J. Dougherty] 125

Occupational Therapy, Keeping Functional [Herbert C. Verry] 281

Pediatrics and Speech-Hearing Services [Marian L. Gilmore] 279

Pennington, Alfred W.: Use of Fat in a Weight Reducing Diet 79

Physical Sterility and Psychic Impotency, Combined, Surgical Intervention in [Harry S. Howard] 217

Pierson, John C. and Mekanik, Edwin A.: Gallstone Ileus 304

Poliomyelitis, Tracheotomy in [George J. Boines] 345

Poinsard, Paul J.: Review of Basic Psychiatric Principles 116

Porphyria [Ralph M. Myerson] 62

Porter, Winder L.: Diagnosis of Congenital Syphilis 268

Pregnancy, Acute Toxemia of [Lawrence L. Fitchett 353

Preventive Psychiatry in Delaware [M. A. Tarumianz] 193

Problem Child, Note on [William S. Robbins] 239

Proceedings, 1951, Med. Soc. of Del. 358

Psychiatric Principles, Basic, Review of [Paul J. Poinsard] 116

Psychotherapy Conferences [Earl A. Loomis, Jr.] 212

Radiotherapy of Benign Lesions Commonly Seen in General Practice [Samuel I. Adelman] 67

Rafal, Harold S.: Pelvic Evisceration With Construction of New Bladder in One Stage 310

Rafal, Harold S. and Selinkoff, Jesse J.: Achalasia Treated by Transabdominal Esophagogastrostomy 27

Reed, Roy E.: Case of Epilepsy 227

Richman, Anne Dunbar and Hoopes, William J.: Application of Bleeding and Coagulation Studies in the Hospital 167

Robbins, William S.: Note on the Problem Child 239

Rogg, Sanford, G.: Psychiatric Consultation in a General Hospital 339

Sabloff, Jack: Program of the Division of Crippled Children's Services 276

Schizophrenia, Childhood, Psychological Study of [W. H. Tracy] 246

Schizophrenia, Juvenile, Two Cases [Tatjana Thaller Canki] 240

Schizophrenic Family, Study of [F. A. Freyhan] 213

Settlage, Calvin: Need for Mental Hygiene 228

Shaw, Paul A.: Mediastinal Lesion 97

Slovin, Isadore and Nealon, James, Meig's Syndrome 8

Social Worker in Group Therapy, Role of [Hazel Browne Madry] 251

Sodium Amytal Addiction With Acute Toxic Psychosis [Julius Fechner] 231

Souder, C. Lawrence R.: Syphilis in Negro Patients 232

Stream Morbidity Report [A. Joel Kaplovsky] 273

Stroud, William D.: Coronary Artery Disease 137

Syphilis, Congenital, Diagnosis of [Winder L. Porter] 268

Syphilis in Negro Patients [C. Lawrence R. Souder] 232

Tarumianz, M. A.: Preventive Psychiatry in Delaware 193

Te, Chow Ching, and Howard, John W.: Survey of Transfusion Reactions 1949-1950 170

Testicular Tumors [Park W. Huntington and Anne C. Dunbar] 1

Tracy, W. H.: Psychological Study of Childhood Schizophrenia 246

Transactions, 1951, Med. Soc. of Del. ... 361

Transfusion Reactions, Survey of [Chow Ching Te and John W. Howard] 170

Triceps Action, Artificial [George J. Boines] 357

Tuberculosis Today [G. Taggart Evans] 347

VanderVeer, Joseph B.: Anticoagulant Therapy in Acute Myocardial Infarction, etc. 145

Verry, Herbert C.: Keeping Occupational Therapy Functional 281

Virus Diseases, Common, of the Skin [Lawrence Katzenstein] 175

Wagner, Charles E.: Impressions After 33 Years in Medical Practice 295

We Live Longer [Cecil A. Marshall] ... 272

Yaskin, Joseph C.: Neuropsychiatric Emergencies 202

DELAWARE HOSPITAL NUMBER

Stacks

DELAWARE STATE MEDICAL JOURNAL

Official Organ of the Medical Society of Delaware
INCORPORATED 1789

VOLUME 24
NUMBER 1

JANUARY, 1952

Per Year, $4.00
Per Copy 50c

CONTENTS

Otologic Applications of Audiology, *E. R. Mayerberg, M. D.*, Wilmington, Del. 1

The Conservation of Hearing, *Edgar N. Johnson, M. D.*, Wilmington, Del. 2

Procedures for the Treatment of Communicative Disorders Resulting From Impairment of Hearing, *L. LeRoy Horne*, Wilmington, Del. 5

The Role of the Speech Therapist in the General Hospital, *Darwin M. Knapp*, Wilmington, Del. 12

Cortical Steroids and Clinical Medicine, *Lemuel C. McGee, M. D.*, Wilmington, Del. 14

Intra-Arterial Histamine in Peripheral Vascular Disease, *James F. Flanders, M. D.*, *George B. Heckler, M. D.*, and *Robert E. Jones, M. D.*, Wilmington, Del. 17

Clinical Value of Venous Pressure Measurements, *Jose Manuel Louro, M. D.*, Wilmington, Del. 21

Clinicopathologic Case Record, *David A. Levitsky, M. D.*, *Robert C. Merrill, M. D.*, and *Park W. Huntington, Jr., M. D.*, Wilmington, Del. 27

Medical Society of Delaware, Amendments Adopted By-Laws 31

Directory 32

Editorials 33

Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly. Copyright, 1952, by the Medical Society of Delaware.

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

COLLEGE OF PHYSICIANS
LIBRARY
FEB 1952
OF PHILADELPHIA

"—and, Doctor, it is contraindicated in—"

Whenever a Lilly representative visits physicians, he gives useful facts about prescription products—without varnishing the truth. Because recognizing the limitations of drugs is often as important as knowing their beneficial effects, every Lilly representative regularly presents both sides of the picture.

He and his company are always aware that integrity in business is good business.

Tied for Binding

Lilly

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U. S. A.

cushions
the
climacteric

THEELIN

THEELIN Aqueous Suspension

Ampoules

1-cc. ampoules of 1 mg. (10,000 I.U.)
1-cc. ampoules of 2 mg. (20,000 I.U.)
1-cc. ampoules of 5 mg. (50,000 I.U.)

Steri-Vials

10-cc. vials of 2 mg. (20,000 I.U.) per cc.
5-cc. vials of 5 mg. (50,000 I.U.) per cc.

THEELIN in Oil

Ampoules

1-cc. ampoules of 0.2 mg. (2,000 I.U.)
1-cc. ampoules of 0.5 mg. (5,000 I.U.)
1-cc. ampoules of 1 mg. (10,000 I.U.)

Steri-Vials

10-cc. vials of 1 mg. (10,000 I.U.) per cc.

PARKE, DAVIS & COMPANY

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

This Book is due on the last date stamped below. **No further preliminary notice will be sent.** Requests for renewals must be made on or before the date of expiration.

DUE	RETURNED
NOV 3 1953	OCT 2 [illegible] 1953
[illegible] 2 9 1954	[illegible]
FEB 1 [illegible]	[illegible]
[illegible] 1954	AUG 2 0 1954
[illegible]	
APR 2 1 1955	APR 1 3 1955
MAY 2 9 1959	
FEB 8 1962	
APR 2 [illegible] 1965	
DEC 2 [illegible] 1965	
[illegible]	
JUN 7 1966	
FEB 2 7 1968	
NOV 2 6 1968	

A fine of twenty-five cents will be charged for each week or fraction of a week the book is retained without the Library's authorization.